

JUNE 1997

<http://www.macuser.com/>

MacUser

DTP SUPER GUIDE

GRAPHICS·LAYOUT·IMAGING

TIPS & TOOLS THE EXPERTS USE



PLUS

**The Latest Macs: 9 New
Tested and Rated**

**Newton Now: Can This PDA
Replace Your Laptop?**

PERSCOMBINATIE BV

J. Berg

AFFDELING IT

POSTBUS 2104

1000 CC AMSTERDAM

NETHERLANDS

1000 CC AMSTERDAM

1000 CC AMSTERDAM

1000 CC AMSTERDAM

1000 CC AMSTERDAM

1000 CC AMSTERDAM

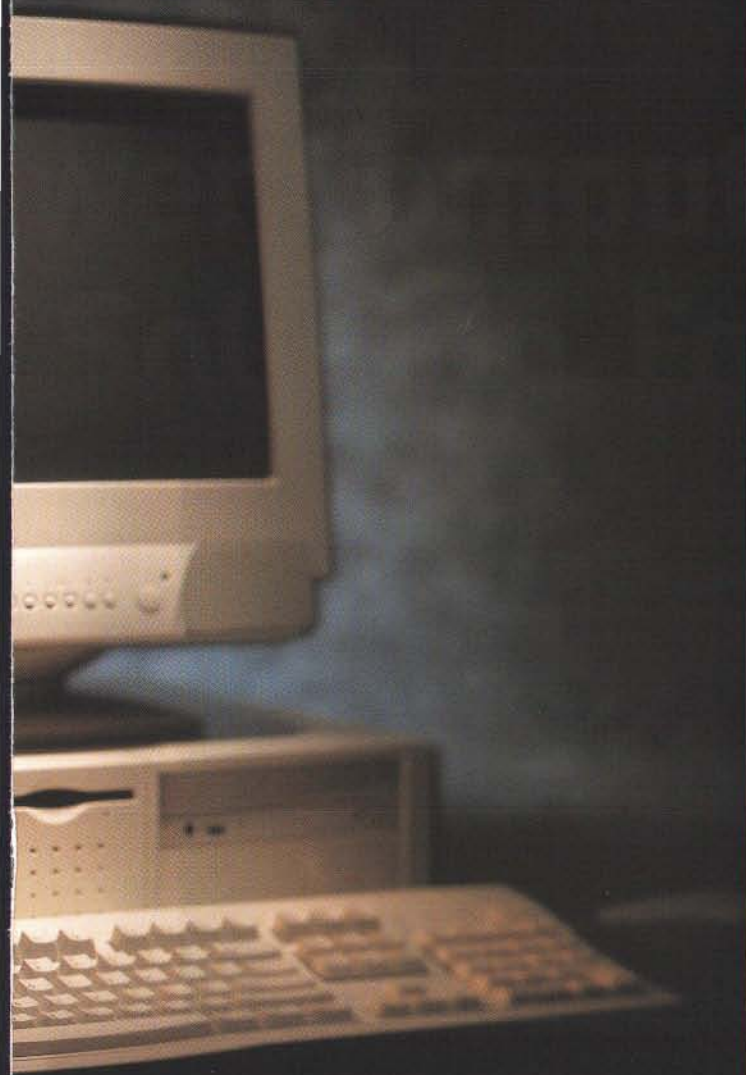
1000 CC AMSTERDAM

MacUser - American Edition

52104680 1997 00 00 00013 00006

Power Computing Solution For Geeks.

Power Pro: A New Generation Of
For the Mid-Range.



Performance Features:

Processor • Exclusive 60 MHz Bus • 1MB Level 2 Cache
Acceleration • First to Market 16x CD ROM

Geeks know a good deal when they see it.

Geeks recommend Power Computing systems because they understand what a tremendous price/performance bargain we offer. When you compare what you're *really* getting for your money, nobody else comes close.



That's probably why our systems win more awards than any of our competitors.

**"POWER COMPUTING HAS THE CLEAR AND UNDISPUTED
EDGE OVER APPLE IN BOTH PRICE AND PERFORMANCE."**

-MACUSER MAGAZINE

Geeks want the absolute best system they can get for their money.

Whether you need a great entry level system, a workhorse mid-range business system, or a top-of-the-line professional system, we have you covered. Our PowerBase™ line starts at just \$1295 for a 180MHz system, and our fastest and most powerful system, the PowerTower™ Pro, starts at just \$4495 for the 250MHz 604e (which, by the way, is the fastest single-processor system you can run on any platform). Our newest system, the PowerCenter™ Pro 604e 210/180 really screams. Starting at \$2095, it brings price and performance together without compromise.

Do your homework, visit our web site at www.powercc.com, talk to a few of your geek friends, and we're sure that your next system will be from Power Computing.



Power Computing

ORDER DIRECT FROM MANUFACTURER

800-405-7693

CIRCLE 24 ON READER SERVICE CARD

Here's Why Power Computing Is The Best Mac OS

Geeks like Jean Bélanger of Metrowerks are very demanding customers.

Geeks provide the answers, fix problems, and recommend which systems to buy. Geeks understand things like bus speeds and code. They're people like



Jean (shown on previous page) and his team of alpha geeks at Metrowerks (the guys that write the code for other geeks to write their code).

Power Computing has become the dominant Mac OS compatible systems manufacturer thanks to the over-

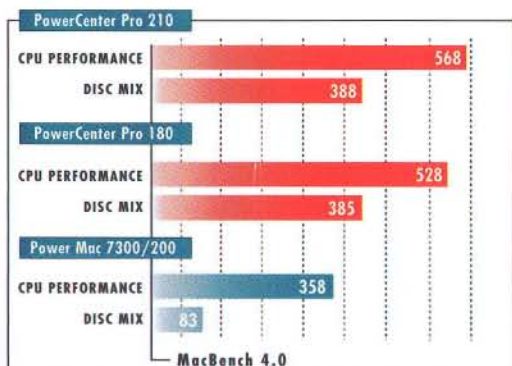


whelming endorsements from the serious propeller-heads of the world.

Geeks buy a system because of its features.

Power Computing has been the technology leader since we began shipping systems. We were first to design our systems with upgradeable daughtercards and we are the only Mac OS manufacturer to offer 1 MB level 2 cache. Our direct business model, exclusive to the Mac OS industry, allows us to also offer custom configuration of RAM, hard drives, internal Iomega Zip™ and Jaz™ drives, VRAM, and video card options.

Check Out The PowerCenter Pro's Benchmarks

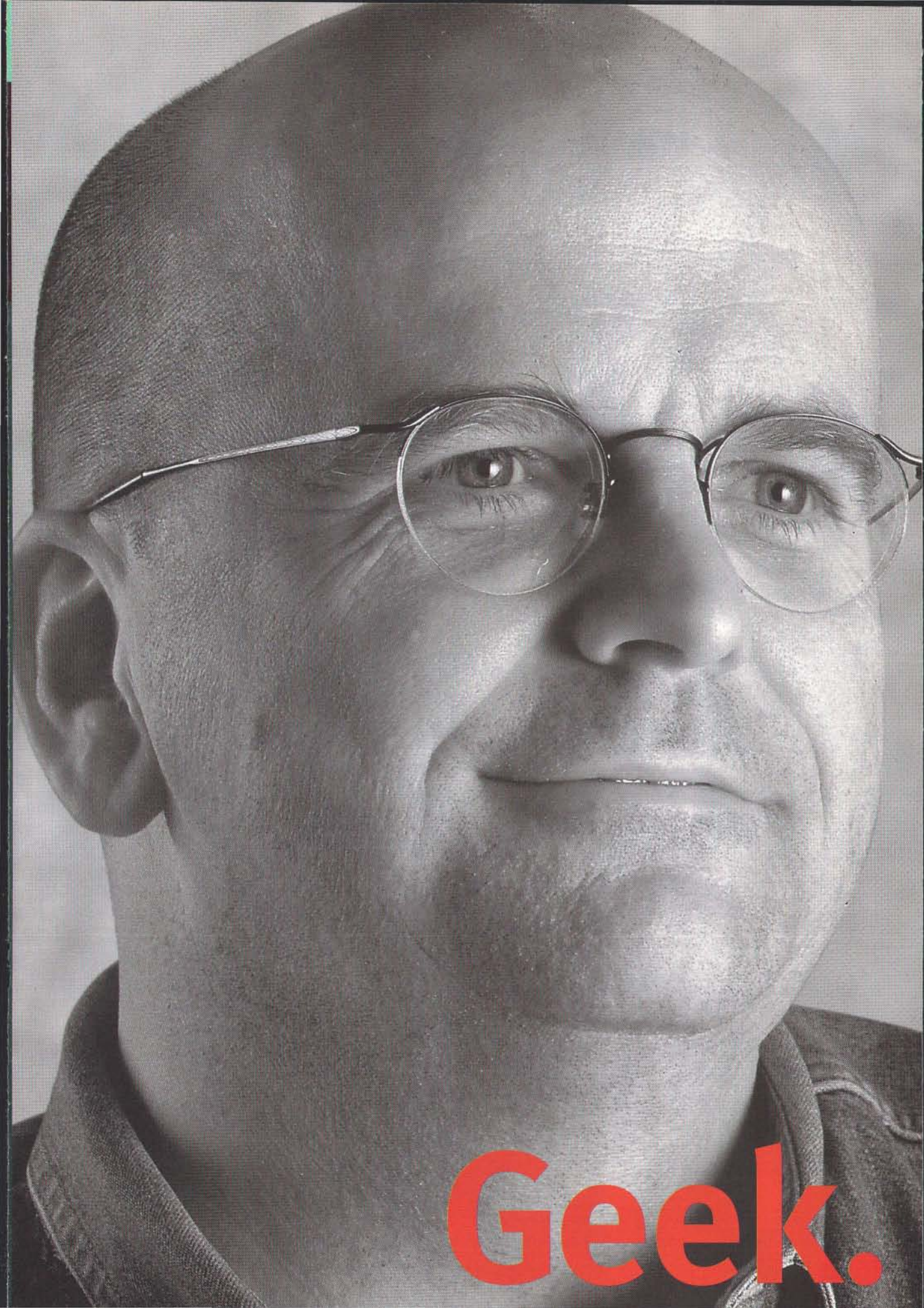


Introducing PowerCenter Mac OS Power



Screaming New P

Upgradeable 180 MHz or 210 MHz PowerPC 604e Pro
Fast 2GB Hard Drive • 3D Video Ac



Geek.

PowerCenter™ Pro 210 Complete System With 17" Monitor* and 33.6 Modem



210 MHz Power PC™ Processor
32 MB RAM (512 MB max)
Power 17" Monitor*

- Upgradeable 210 MHz PowerPC 604e Processor
- 2 GB 5400 RPM HD
- Exclusive 60 MHz Bus
- 16X CD-ROM Drive
- 1 MB Level 2 Cache
- 2 MB Video DRAM (4 MB Max)
- 3D Onboard Hardware Graphics Acceleration
- 3 PCI Expansion Slots
- Mini-Tower Enclosure
- 33.6 Global Village Modem
- \$1,000 in Bundled Software
- Extended Keyboard and Mouse

NEW!

Just \$2995

PowerBase Low Price/High Performance

PowerBase 200 complete
Power 15" Multimedia Display**
33.6 Global Village Modem
16 MB RAM (160 MB Max)

- Upgradeable 200 MHz PowerPC 603e Processor
- 1.2 GB EIDE Drive
- 16 MB RAM (160 MB Max)
- Upgradeable 256K Level 2 Cache
- 12x CD-ROM Drive
- 2 MB Video DRAM (4 MB Max)
- 3D Accelerated Graphics
- 3 PCI Expansion Slots
- \$1,000 in Bundled Software
- Mini-Tower Enclosure
- Extended Keyboard & Mouse w/PS2 support



17" Monitor shown

\$1995 180MHz STARTER \$1295
240MHz STARTER \$1895
36 month business lease \$82 per month

PowerCenter Pro The Affordable Workhorse

PowerCenter Pro 180 complete
Power 17" Monitor*
33.6 Global Village Modem
32 MB RAM (512 MB Max)

- Upgradeable 180 MHz PowerPC 604e Processor
- 2 GB 5400 RPM HD
- Exclusive 60 MHz Bus
- 16x CD-ROM Drive
- 1 MB Level 2 Cache
- 3D Accelerated Graphics
- 2 MB Video DRAM
- 3 PCI Expansion Slots
- Mini-Tower Enclosure
- \$1,000 in Bundled Software
- Extended Keyboard And Mouse

NEW!



\$2695 180MHz STARTER \$2095
210MHz STARTER \$2395
36 month business lease \$94 per month

PowerTower Pro Ultimate High-End Power

PowerTower Pro 225 complete
Power 17" Monitor*
64 MB RAM (1 GB max)
Macromedia Director 5.0

- Upgradeable 225 MHz PowerPC 604e Processor
- 2 GB 7200 RPM AV Capable HD
- 64 MB RAM (1 GB Max)
- 16x CD-ROM Drive
- 1 MB Level 2 Cache
- 8 MB IMS Twin Turbo Graphics Accelerator
- Interleaved Memory
- 6 PCI Expansion Slots
- 9 Drive Bays
- 33.6 Global Village Modem
- \$2,500 in Bundled Software
- Extended Keyboard and Mouse



\$4695 225MHz STARTER \$3695
250MHz STARTER \$4495
36 month business lease \$189 per month



Power 17" Monitor Display For Just \$629

Get a quality Power Computing .26 dot pitch high resolution display. It's great for graphics professionals. Vis. 15.7"

RAM Upgrades:
8MB \$65 32MB \$260
16MB \$130 64MB \$500

Upgrade your new system with plenty of RAM. Power Computing's prices are competitive and all of our RAM has the same warranty as our systems. Plus it's tested, pre-installed, and hassle-free.



Power 15" Multimedia Display Just \$339

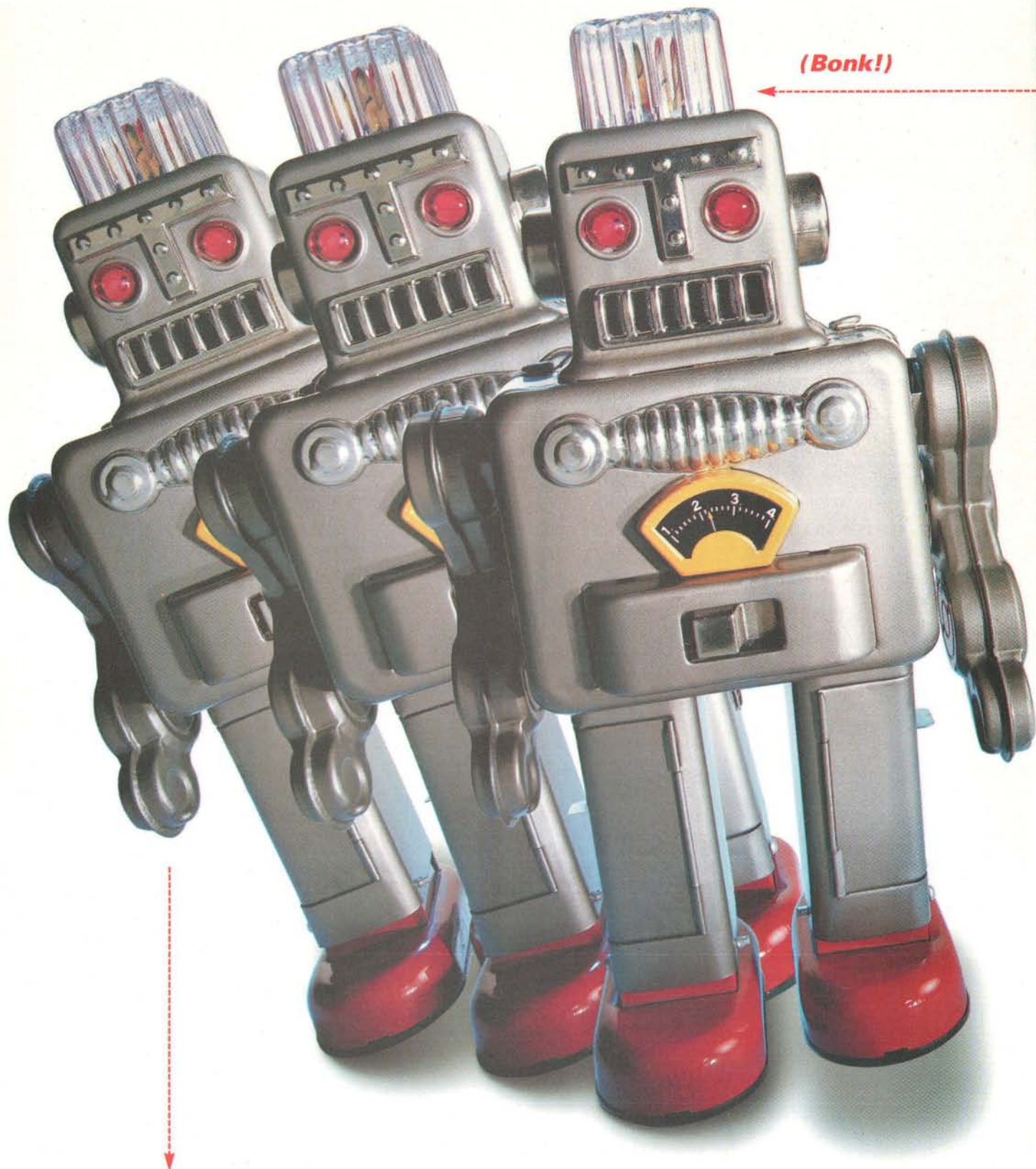
Our 15" multimedia display with built-in speakers makes a great second monitor for pallets or a primary monitor for anyone on a budget. Vis. 13.7"

CUSTOM-CONFIGURE YOUR NEW SYSTEM.
CALL DIRECT 800-405-7693

Order Online: www.powercc.com



PowerComputing



(Bonk!)

(Timberrr!)



Who better to make your Mac than the company who designed the PowerPC™ chip?



If we can ship 50,000 in just seven weeks, we can ship yours now.



Our MacUser "Best Buy" StarMax 3000/160 MHz computer is now a better buy at 180 MHz and \$1,249.*

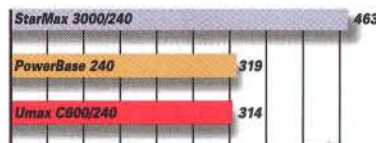


Our five-year limited system warranty is four years longer than our competitors.



We've been committed to the Mac OS since the very beginning. And the innovation won't stop here. Together with Apple, we'll bring even more amazing things to the Mac world.

With Mac® clones popping up everywhere, wouldn't it be great to know there's one made by someone you already trust? We thought so too. Which is why we've



introduced the StarMax™ MacBench® Floating-Point Performance Ratings†

Mac® OS-based line of computers. From 180 MHz to 240 MHz, 1.2 GB to 2.5 GB hard drives and starting at \$1,249.* And with Motorola Six Sigma quality behind them, every StarMax comes with a

StarMax. The knockout in a crowd of knockoffs.

five-year limited system warranty—and nobody can clone that. Plus StarMax outperformed similarly configured Mac OS computer systems by as much as 45% in recent tests. It's no wonder more StarMax computers were sold in our first 100 days than any other Mac compatible in history. So get your own StarMax Mac OS computer by calling us or visiting our website. And put yourself ahead of the crowd.

1-800-759-1107 ext. MCU • www.mot.com/starmax



MOTOROLA
Computer Group

©1997 Motorola, Inc. All rights reserved. Motorola and  are registered trademarks and StarMax is a trademark of Motorola, Inc. PowerPC and the PowerPC logo are registered trademarks of and are used under license from International Business Machines Corporation. Mac and Mac OS are registered trademarks of Apple Computer, Inc. MacBench is a registered trademark of Ziff-Davis Publishing Co. All other brand and product names are the trademarks or registered trademarks of their respective holders. *Manufacturer's suggested retail price. †MacBench 4.0, 1997.

What you never thought possible.™

CONTENTS

NEWS

Leaner, Meaner Apple's reorg cuts 4,100 jobs and several technologies. / **Between the Lines** Power Computing's new CEO, Joel Kocher, brings PC-manufacturing savvy to the Mac market. / **Future Tech** High-density-disk technology to be eclipsed. / **First Looks** Consumer Power Macs arrive in four flavors — Home, Small Business, Apple Creative Studio, and PC Compatible; beefy Netscape Communicator 4.0 takes on Microsoft's Internet Explorer and Lotus Notes; and Astound 3.0 gets animated with fun new features. / **Plus** The Macintosh Price Index. / 22



COLUMNS

Letters Readers wax Rhapsodic and give Apple's dreams a chance. / 13

Andrew Gore Riddle me this: Is a Mac still the right choice for you? / 17

Henry Bortman The perils of PPP, Open Transport-style. / 21

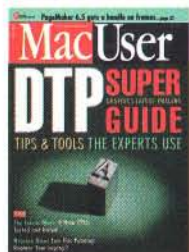
Andy Ihnatko The quintessential geek accessory. / 154

How to Reach Us / 8

Product Index / 112

Advertiser Index / 116

Marketplace / 125



On the cover / DTP Superguide — the latest tools and plug-ins.

Cover photo / Lon Clark

REVIEWS

Mac OS Systems We torture-test a truckload of new systems from Apple, APS, Motorola, and UMAX to see whether Apple is catching up. We also check out Apple's first consumer Power Mac that *isn't* a Performa. / 30

Adobe PageMaker 6.5 It's been framed! But forget the whole "Quark killer" thing — this significant upgrade should be judged on its own merits. / 32



Epson Stylus Color 600 and Stylus Color 800 Record-setting 1,440-x-720-dpi resolution, outstanding photo-realistic output, and impressive speed — all for under \$500. Are these printers for real? / 36

SyQuest SyJet Rivaling Iomega's well-established Jaz drive in price and speed, underdog SyJet delivers 40 percent more capacity. / 38

Whistle InterJet 100 Want Web access and Internet e-mail for your small business without hiring an IS administrator? Give this toaster-sized contraption a try. / 42

Adobe Type Manager Deluxe 4.0 The addition of font-management tools like those in challengers Suitcase and MasterJuggler put the *Deluxe* in this year's ATM. / 44

Adobe Type Reunion Deluxe 2.0 Much-needed stability and nifty new features may salvage your love/hate relationship with this utility. / 45

Nikon CoolPix 100 Spies like us will love this digital camera in a PC Card package — as long as image quality isn't an issue. / 46

OmniForm 2.0 Still longing for that paperless office? Digitize all those paper forms, save the data to a built-in database... but then what? / 46

Extreme 3D 2 Web and multimedia designers will be extremely animated about this fantastic upgrade to Macromedia's 3-D-modeling, -rendering, and -animation package. / 48



DTP SUPERGUIDE

MACUSER EXPERT ADVISOR

POWER PLUG-INS

Four Photoshop masters impart their wisdom.

Our plugged-in Photoshop experts consult with their peers and pick the absolute-best plug-ins for artistic effects, prepress, and Internet design. Be forewarned: These power plug-ins are not for the faint of heart. No guts, no glory. **By Sherry London, Bruce Fraser, Lynda Weinman, and Joe Maller / 54**



PLUS

THE DESKTOP PUBLISHERS TOOLKIT

Twenty-four must-have tools for DTP pros.

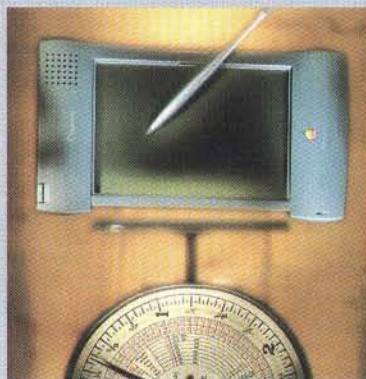


MacUser hits the streets and surveys today's Mac DTP professionals on the software they use and value most in the field. The result? This ultimate list of the top two dozen font, text, graphics-file, color-management, page-layout, and output-tweaking tools. **By Kathleen Tinkel / 62**

FEATURES

The Newton Weighs In

LABS At long last, a Newton we can recommend with a clear conscience. Although a bit on the hefty side in weight and price, the Newton MessagePad 2000 packs a punch. Is your PowerBook about to get deep-sexed? **By Jeff Pittelkau / 68**



High-Capacity Hard Drives

LABS We speed-test and evaluate 21 high-capacity hard drives, to help you drive a hard bargain when your disk tops out. **By Roman Loyola / 52**

DEPARTMENTS

DESKTOP MEDIA

Photo Fixes Grappling with flawed digital-camera images? Tuck these phenomenal Photoshop tricks up your sleeve. / 73

Graphics How-To For frustrated Photoshop users, we hold the key to multiple undos. / 78

Expert Tips Technological change in the DTP world requires workflow change to keep pace. Keep up, or slip up. / 80

NETWORKING

Macs? Not on My Network! Our informants arm you to combat myth and misinformation in a Mac-hostile IS world. / 83

Net.cetera Sure, you can create a wonderful Web site, but the complete site-management app is still elusive. / 87

HANDS ON

Soup Up Your PowerBook 1400 Got 3400 envy? As Oscar Goldman used to say, "We can rebuild him ... better, stronger, faster." / 89

Help Folder Bob and Chris answer all your questions. / 93

PERSONAL MAC

The Reference Desk A do-it-yourself research library right at your fingertips — and no one to tell you, "Sshhhh!" / 148

The Game Room Great gear for gamers. / 152



MacUser (ISSN 0884-0997) is published monthly by Ziff-Davis Publishing Company, One Park Avenue, New York, NY 10016. Editorial Offices: 50 Beale Street, 12th Floor, San Francisco, CA 94105. Telephone: 415-547-8600. U.S. subscription rates are \$27 for 12 issues, \$45 for 24 issues, and \$62 for 36 issues. Additional postage for orders outside the U.S.: Add US\$16 per year for surface mail. Single-copy price is \$3.99 (Canada, \$4.99). Canadian GST registration #14049 6720 RT. Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement No. 278521. POSTMASTER: Send address changes to *MacUser*, P.O. Box 56986, Boulder, CO 80328-6986. Periodicals Mail postage paid at New York, NY 10016, and at other mailing offices. Printed in the USA.

DRAW circles around those other CADs



"Clients love these softline drawings we produce using PowerCADD and WildTools."
—Tom Kennedy, Architect

You want drawings that look like the ones you've always done by hand—or better. Exquisitely detailed. Perfect arrows. Crisp lines. Or maybe a squiggly sketch. You don't want it to look like it was done on a computer.

PowerCADD lets you draw like that, and it doesn't get in your way. Draw floor plans. Machinery. Charts. Sketch a bush. Doodle a cloud. A flower.

You can draw anything with PowerCADD. And it's easy.



PowerCADD

Turn your genius loose. Put some fun back into your life. Order PowerCADD.

Call 910-299-4843 In Canada: 204-453-8111

ENGINEERED SOFTWARE

http://www.engsw.com Fax: 910-852-2067

CIRCLE 73 ON READER SERVICE CARD

MacUser

Group Publisher

John Blake

Editor in Chief

Pamela Pfiffner

Editorial

Editor **Andrew Gore**

Managing Editor **Nancy Groth**

Technical Director **Henry Bortman**

Executive Editor **Rik Myslewski**

Senior Editors **Karen J. Ohlson, Nancy Peterson, Jim Shatz-Akin**

Senior Associate Managing Editor **Claire H. Breen**

Chief Copy Editor **Eva Langfeldt**

Associate Technical Editor **Rhoda Simmons**

Associate Editors **Shelly Brisbin, Roman Loyola**

Copy Editor **Jon Zobenica**

Assistant Editors **LaMont Ridgell, Scholle Sawyer, Brooke C. Wheeler**

Contributing Editors **Sharon Zardetto Aker, David Biedny, Christopher Breen, Don Crabb, Shelley Cryan, Bruce Fraser, Andy Ihnatko, Ted Landau, Bob LeVitus, John Rizzo, Bob Schaffel, Michael Swaine, Gregory Wasson, Chuck Weger, Kelli Wiseth**

Executive Assistant to Editor in Chief **Teresa Bojorquez**

MacUser Labs

Group Labs Director **Jeffrey S. Pittelkau**

Test Manager **Kristina De Nike**

Senior Project Leader **Jeffrey K. Milstead**

Project Leader **Rick Oldano**

Associate Project Leader **Martin Wong**

Technical Specialist **Chris Moreno**

MacUser Online

Editor, Online **James S. Bradbury**

Senior Editor, Online **Jason Snell**

Associate Editor, Online **Philip W. Dyer**

Design

Art & Design Director **Lisa Orsini**

Senior Art Director **Diane Dempsey**

Desktop Publishing Manager **Jan McKenzie Rogers**

Art Production Assistant **David G. Simoni**

Advertising/Sales

Advertising Coordinators **Rick Sandoval, Jennifer Weiss**

Production

Production Director **Carlos Lugo**

Production Manager **Jill Foxe**

Production Coordinator **Corina Youdelman**

Marketing

Associate Publisher/Group Marketing Director **Laurel Clark Skillman**

Marketing Manager **Renee Bula**

Marketing Coordinator **Stephanie Walter**

Sales and Marketing Assistant **Jasmin Araneta**

Operations

Group Business Manager **Mary E. Colbert**

Group Business Analyst **Christine Finn**

Assistant to Group Publisher **Beth Ina**

Assistant to Group National Advertising Manager **Gina L. Michelucci-Mathers**

ZIFF-DAVIS PUBLISHING

Chairman and CEO **Eric Hippeau**

President, U.S. Publications **Ronni Sonnenberg**

President, Interactive Media and Development Group **Jeffrey Ballowe**

President, International Media Group **J. B. Holston III**

President, Computer Intelligence **Bob Brown**

President, Training and Support Publishing Group **William Rosenthal**

Vice President, Chief Financial Officer **Timothy C. O'Brien**

Senior Vice President, Marketing **Terri Holbrooke**

Vice President, General Counsel, and Secretary **J. Malcolm Morris**

Vice President, Human Resources **Rayna Brown**

Vice President, Planning **Daryl R. Otte**

Vice President, Production **Roger Herrmann**

Vice President, Controller **Mark Moyer**

Vice President, Information Systems **Steve Gladyszewski**

Treasurer **Thomas L. Wright**

U.S. Publications Group

President, U.S. Publications **Ronni Sonnenberg**

President, Business Media Group **Claude P. Sheer**

President, Consumer Media Group **J. Scott Briggs**

Senior Vice President, Consumer Advertising **Lawrence C. Burstein**

Senior Vice President, Circulation **Baird Davis**

Executive Vice President, Business Media Group **Don Byrnes**

Executive Vice President, Group Publisher **Al DiGuido**

Vice President, Business Manager **Tom McGrade**

Vice President, Marketing Services **Jim Manning**

Vice President, Central Advertising Sales **Bob Bader**

Vice President, Product Testing **Mark Van Name**

Vice President, Circulation Services **James F. Ramaley**

Vice President, Creative Services **Herbert Stern**

Vice President, Research **Elda Vale**

Vice Presidents **Michael Miller, Paul Somerson**

Executive Director, Licensing **Gertrud Borchardt**

Director, ZD Labs **Mark Hall**

Director, Benchmark Operation **Bill Catchings**

Director, Public Relations **Gregory Jarboe**

Senior Vice President, Ziff-Davis Media Network **Joe Gillespie**

Executive Director, Ziff-Davis Media Network **Jeff Bruce**

Executive Director, Marketing, Ziff-Davis Media Network **Michael Perkowski**

Managing Director, Ziff-Davis Media Network **Rita Burke**

Directors, Ziff-Davis Media Network **Ken Beach,**

Michael Bird, Melinda Maginn, Scott Murphy,

Sue Pasioka

Associate Directors, Ziff-Davis Media Network **Dobbie Moss,**

Julie Tuttle

Interactive Media and Development Group

President, Interactive Media and Development Group **Jeffrey Ballowe**

Executive Vice President **David Shneider**

Executive Vice President, Internet Publishing Group **Daniel Rosensweig**

Vice President, Editor in Chief, ZDNet **Daniel Farber**

Vice President, General Manager, ZDNet **James Savage**

Vice President, ZDTV **Richard Fisher**

Editorial Director, New Products **Bill Machrone**

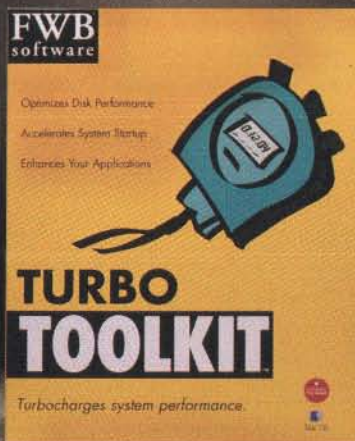
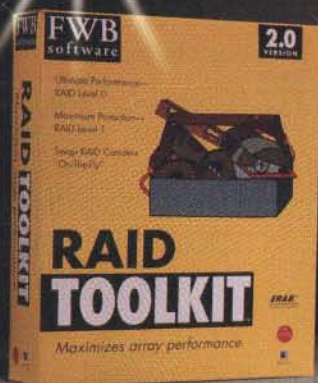
Group Business Manager **Jocelyn Grayson**

ZD SOFTBANK
ZIFF-DAVIS
www.zdnet.com

Ziff-Davis Publishing Company, A Softbank Company

\$149

COMPETITIVE
UPGRADE



\$99

COMPETITIVE
UPGRADE

Don't Miss the **PERFORMANCE** of a Lifetime!

Ladies and Gentlemen, FWB is proud to announce the industry's premiere **Trade-Up Offer!** Save 50% on the #1 selling disk utility software during this limited time engagement. Our award-winning cast features the biggest stars in storage management.

RAID TOOLKIT 2.0 tops the bill with RAID Level 0 data striping for double the performance, and RAID Level 1 disk mirroring for ultimate data protection. And now, with removable array support, you can swap RAID canisters (and Jaz™ array cartridges) "on-the-fly".

Find out why nearly a million loyal fans have switched to **HARD DISK TOOLKIT**. Our new 2.0 is the most powerful disk management package available—with universal SCSI and IDE support, one-step disk set-up, and faster I/O for your Mac.

Also, be sure to catch our newest rising star, **TURBO TOOLKIT**, as it works behind the scenes to optimize disk performance, accelerate system start-up, and make all your applications smarter and faster. But hurry, this stellar performance is sure to sell-out fast.

COMPETITIVE UPGRADE

RAID TOOLKIT \$149

Eligible products include DiskWorks™, Remus™, Conely RAID™, Anubis RAID™, Express Stripe™ or any other non-FWB array management software.

HARD DISK TOOLKIT \$99

Eligible products include Silverlining™, Anubis™, Formatter-One™, APS Power Tools™, SCSI Director™, Drive7™, Zip-Tools™ or any non-Apple formatting software.

MW ★★★★★ ½

Must fax proof of competing product ownership (disks or manual cover). Offer expires March 31, 1997. Upgrades shipped in promotional packaging.



FWB
software

#1 in Storage Management.™

TO ORDER

MENTION FWB COMPETITIVE UPGRADE

MacWarehouse: 1-800-255-6227

MacZone: 1-800-248-0800

MacMall: 1-800-222-2808

For More Info - <http://www.fwb.com>

FWB ToolKit owners upgrade at: 1-800-581-4FWB

MacUser

Get it.
Every
month.

Huge
savings.
**FREE
GIFT.**

All yours.
Just go to

**http://
subscribe.
macuser.
com/save**

Right now.

MacUser

How to Reach Us

THE EDITORS of *MacUser* want to hear from you. Send your questions, tips, kudos, comments, or complaints to *MacUser*, 50 Beale Street, 12th Floor, San Francisco, CA 94105; 415-547-8600. Send e-mail to letters@macuser.com (Internet). We are, unfortunately, unable to look up stories from past issues, recommend products, or diagnose your Macintosh problems by telephone. Contact Apple toll-free at 800-538-9696, ext. 500, for information on user groups in your area.

IF YOU SUBMIT A TIP to *MacUser* (and we hope you do), please be advised that you agree that Ziff-Davis Publishing Company and its affiliates and licensees can reproduce, publish, display, and distribute your tip worldwide in all print and electronic media and in all other forms, manner, and media now known or hereinafter devised.

Subscription Inquiries/Change of Address

FOR SUBSCRIPTION-SERVICE questions, address changes, or ordering information, please write to *MacUser*, P.O. Box 56986, Boulder, CO 80322-6986. New subscriptions and address changes can take six to eight weeks. For back issues (subject to availability), send \$7 per issue, \$8 outside the U.S., to Back Issues Dept., Ziff-Davis Publishing Company, P.O. Box 53131, Boulder, CO 80322-3131. We periodically make lists of our customers available to carefully screened mailers of quality goods and services. If you do not wish to receive such mailings, please let us know by writing to us at *MacUser*, P.O. Box 56986, Boulder, CO 80322-6986. *MacUser* (ISSN 0884-0997) is published monthly by Ziff-Davis Publishing Company, One Park Avenue, New York, NY 10016. Editorial Offices: 50 Beale Street, 12th Floor, San Francisco, CA 94105. Telephone: 415-547-8600. U.S. subscription rates are \$27 for 12 issues, \$45 for 24 issues, and \$62 for 36 issues. Additional postage for orders outside the U.S.: Add US\$16 per year for surface mail. Single-copy price is \$3.99 (Canada, \$4.99). Canadian GST registration #14049 6720 RT. Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement No. 278521.

POSTMASTER: Send address changes to *MacUser*, P.O. Box 56986, Boulder, CO 80328-6986. Periodicals Mail postage paid at New York, NY 10016, and at other mailing offices.

ZDNet Mac

ZDNET MAC is a commercial online service that provides selected articles, reviews, and electronic supplements to *MacUser*. In addition, you will find thousands of reviewed shareware files and have a chance to interact with editors. To order a free starter kit to access ZDNet Mac, hosted on CompuServe, call 800-848-8199. On **CompuServe**, simply type GO ZMC :MACUSER. Or check out *MacUser's* home on the **World Wide Web**, at <http://www.macuser.com/>.



Complaints About Advertisers

MacUser EDITORS are not responsible for the contents of the advertisements in the magazine. However, if you bought a product advertised in *MacUser*, are dissatisfied, and can't resolve the problem, write to Ad Department, *MacUser*, 50 Beale Street, 12th Floor, San Francisco, CA 94105.

Permissions and Reprints

MATERIAL IN THIS PUBLICATION may not be reproduced in any form without permission. Written requests for permission should be addressed to Chantal Tucker, Ziff-Davis Publishing Company, One Park Avenue, New York, NY 10016, or faxed to 212-503-5475.



For Reprint Price Quotes, Call
800-825-4237

Product Announcements and Updates

SEND PRODUCT INFORMATION to News Editor and send new products to Reviews Editor at *MacUser*, 50 Beale Street, 12th Floor, San Francisco, CA 94105.

In memory of **John J. Anderson** 1956 - 1989
and **Derek Van Alstyne** 1967 - 1989

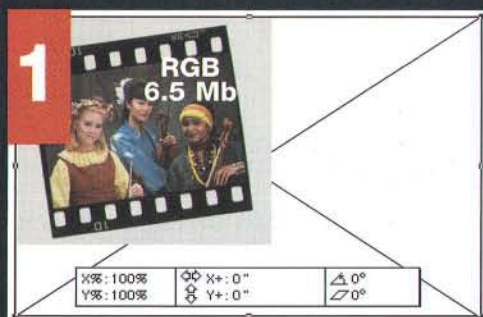


Entire contents © 1997 Ziff-Davis Publishing Company. All rights reserved; reproduction in whole or in part without permission is prohibited. *MacUser* is a registered trademark of Ziff-Davis Publishing Company. *MacUser* is an independent journal, not affiliated in any way with Apple Computer, Inc.

Unbelievable Simplicity

Don't be concerned about the resolution, size, horizontality and color correction and mode. Just import images in the Quark image box from a Photo CD disk or from a raw scan. Position them however you want using QuarkXPress's tools. For each, send orders with the processing options to the IPM.

I import my pictures in my QuarkXPress document's image boxes



TIFF, EPS JPEG or Photo CD ImagePac; RGB, YCC, grayscale or CMYK. This image was scanned from a 35 mm original in RGB raw mode at 100% size on a PowerLook 2000 flatbed scanner at its optical resolution of 1000 dpi.

I position them using the XPress tools and I select processing options using the binuscan Xtension



The client Xtension writes the "order list" then sends it to the IPM for processing. It includes the values entered in the QuarkXPress "measurement bar" plus the processing and output options set in the Xtension's user interface.

Phenomenal Productivity

A catalog with hundreds of images that may require several people a week's worth of work can be processed and ready to output in just a few hours. Processing can take place overnight, even on a low-end desktop computer, with little RAM.

After processing, the new recalculated images are re-imported in the desired color mode with the right amount of pixels... automatically



From a single RGB file, those CMYK, grayscale or CMYK-BW processed images will output at a blazing speed, due to their optimization.

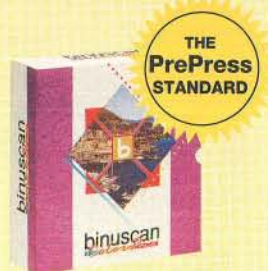
Astonishing Quality

Each processing algorithm uses state-of-the-art technology. Even when the IPM is used only to resize images previously color corrected and separated, the screen preview is recalculated with colors and a sharpness that are truly impressive. No more surprises on the color proof!

CIRCLE 133 ON READER SERVICE CARD

binuscan Inc.
505 5th Avenue - New York, NY. 10017
Tel: (800) 881-2352 - Fax: (212) 681-0603

On the Internet:
<http://www.binuscan.com>
e-mail: info@binuscan.com



binuscan
ColorPro

Client/Server Applications
for complete digital image management

Mac OS & Windows 3.11, 95 & NT

THE SERVER APPLICATION

"binuscan IPM" (Image Processing Machine) works in the background, using the processor only when it's free. It recalculates a new image based on the original and a list of orders generated by a client application. This "order list" contains all the user's output preferences, including (but not limited to) CMYK separation specs, automatic color correction instructions, and sharpening levels, as well as any other modifications made to the image (crop, flip, rotate, resize, etc.) by the client application. binuscan achieves an impressive high and consistent quality every time because the IPM bases its processing algorithms on an individual histogram analysis of every image.

THE CLIENT APPLICATION

Many client applications can be used to generate "order list" text files and save them into the IPM's "TO DO" folder for processing. binuscan's open architecture allows third party developers to write custom client applications. The binuscan ColorPro package includes the binuscan IPM plus client applications to acquire images from scanners or Photo CDs and binuscan JobManager (a Quark Xtension) which works as described to the left.

THE PERSONAL TOUCH

binuscan ColorCorrect is a utility included with the IPM which allows you to create ghost effects or "sepia effects" and harmonize the images on your page. This utility will perform color adjustments to processed images by writing PostScript functions to the image file. Modifications are written then updated in your page layout in seconds, no matter how large the files are. Every modification can be reverted with the same ease and in the same manner.

a special version of binuscan

is bundled with all

UMAX

high-end scanners

and is freely available for every

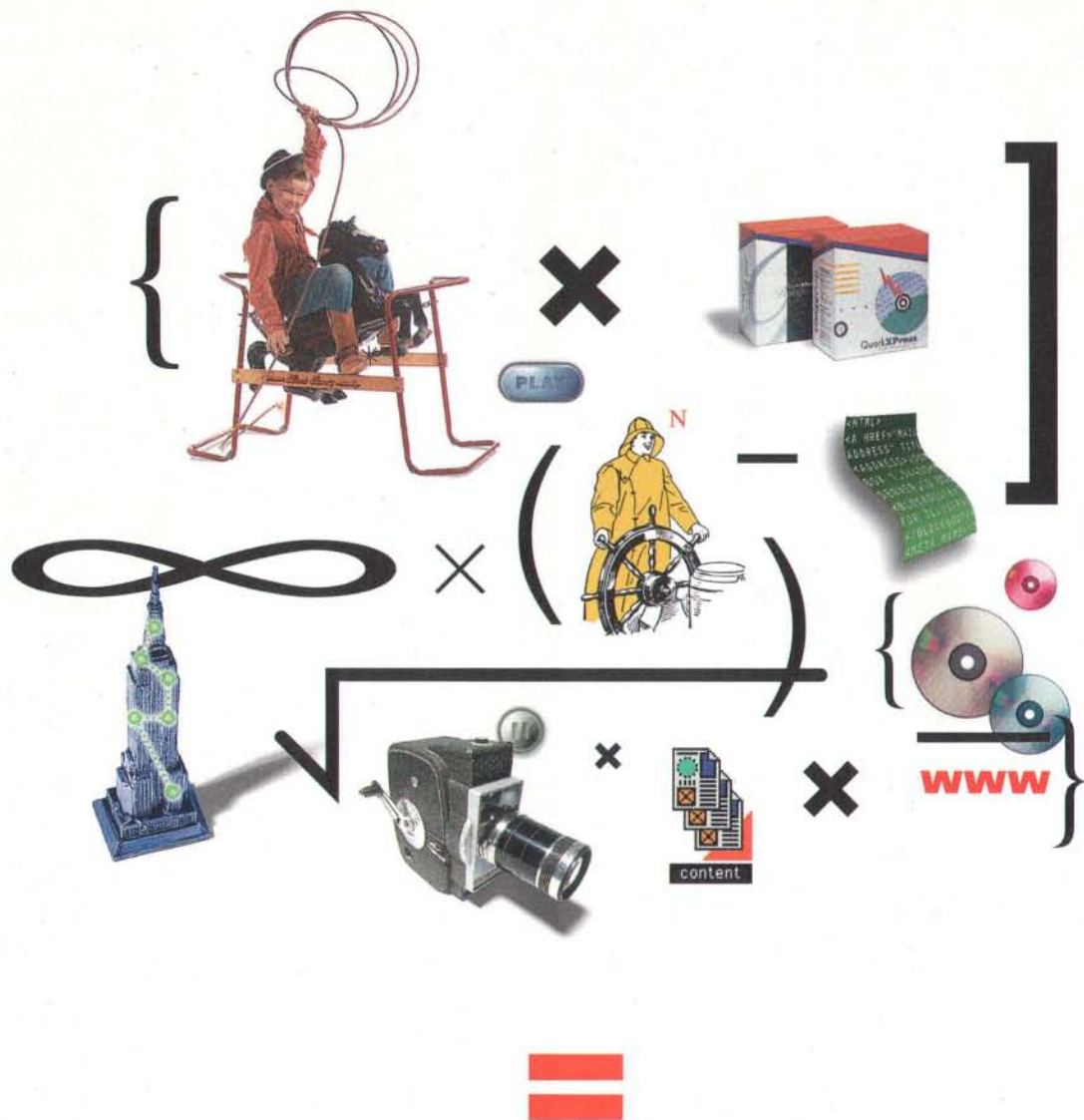


Pro Master Photo CD

binuscan
PhotoPerfect

Quark and QuarkXPress are registered trademarks of Quark, Inc.

Multiply and conquer.



[Quark**Immedia**.]

Add multimedia to the equation. QuarkImmedia makes it easy.

To make an impression on the Web, an intranet, a CD-ROM, or anywhere else multimedia is the medium, you need precise control over a wide array of variables. Like sound, video, and animation. Special effects transitions, complex interactions, and hot links to cool spots online. QuarkImmedia™ gives you control over each of these dynamic elements in a single point-and-click authoring environment. No separate servers, plug-ins, or programming required.

With QuarkImmedia you get frame-by-frame animation, custom compression settings, and automatic calculation and simulation of Internet download times. Your audience gets streaming

audio and real-time interactivity on the Web with the royalty-free QuarkImmedia Viewer.

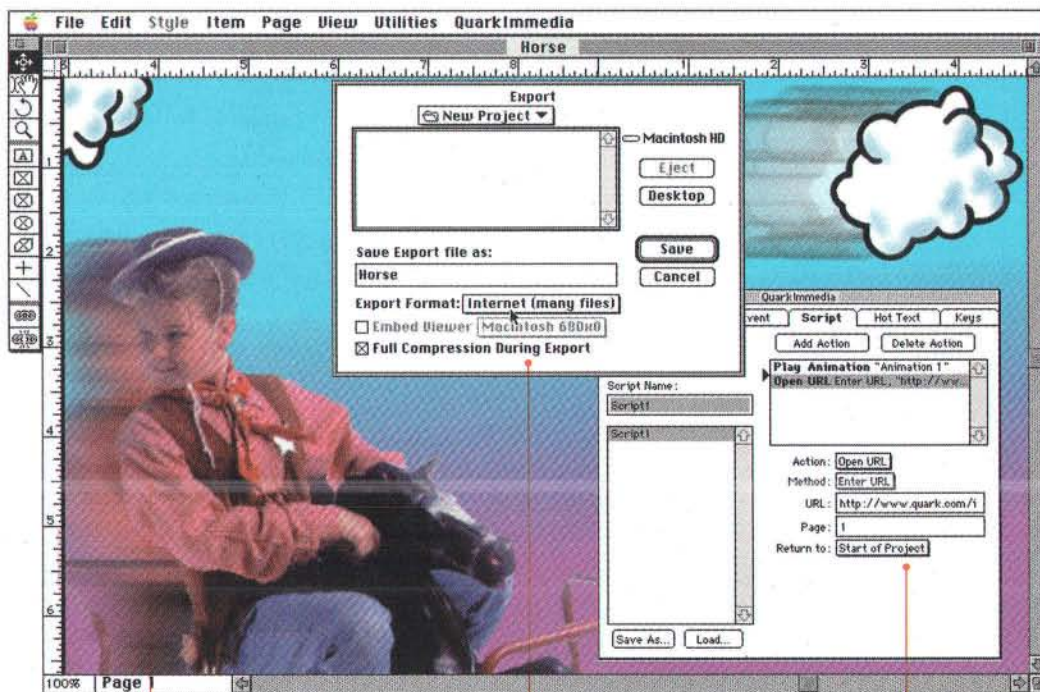
And because it works with QuarkXPress™, QuarkImmedia lets

you (and your clients) capitalize on investments already made in content, software, and skilled personnel. So you can adapt existing print assets for the screen without going back to square one — and without forfeiting one iota of the design control you have on paper. *Multiply your opportunities without dividing your creative energies.*

Call MacZone
for a specially priced
QuarkXPress/QuarkImmedia
bundle that includes Strata's
Vision 3d, VideoShop, & Media
Paint. 1-800-248-0800
(ISC MQ03)



Come see QuarkImmedia in booth #1733 at Seybold New York. Or check out the QuarkImmedia Tour, coming soon to a site near you! For details, visit our Web site or call 1.800.269.2008.



Incorporate sophisticated animation into Web content without having to deal with programming, plug-ins, or applets.

Caching, compression, and multiple-file architecture optimize performance at any bandwidth.

Any object can be used as a link to another QuarkImmedia or HTML site.

QuarkImmedia. For the interactive imagination.

For a free demo package, call 1-800-788-7835 Ext. 3037
Visit our Web site at <http://www.quark.com/immedia.htm>

QUARK

Quark and QuarkXPress are trademarks of Quark, Inc., Reg. U.S. Pat. & Tm. Off. QuarkImmedia and the Quark logo are trademarks of the Quark companies. All other trademarks are the properties of their respective owners.

New
Version 4.0



MacTM OS

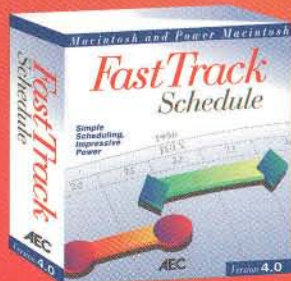


"If you're looking for a quick and easy way to create Gantt charts, this program might be just the one for you."

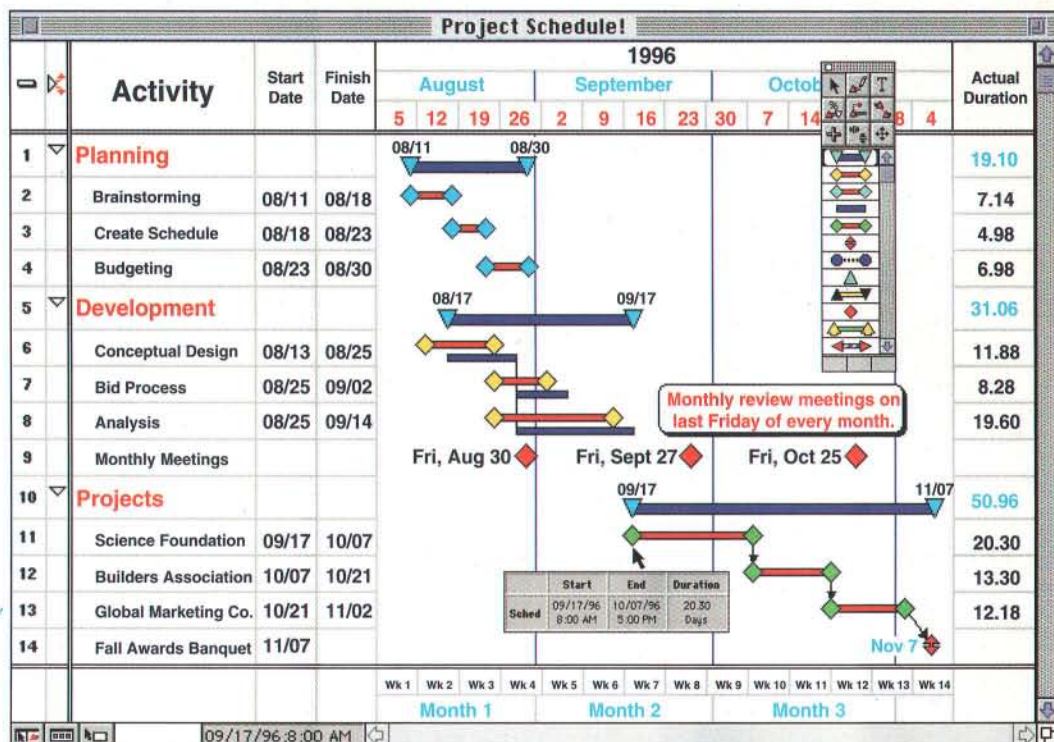
MacUser

◆◆◆◆◆
"...An excellent choice for anyone whose primary need is to create precise, presentation-quality Gantt charts."

MacWEEK



Project Scheduling Made Easy.



FastTrack ScheduleTM 4.0

You can't stay on schedule if you don't have one!

FastTrack Schedule 4.0 lets you create and update presentation-quality schedules quickly and easily. Whether you need a quick scheduler or a full tracking system, FastTrack Schedule 4.0 offers the combination of flexibility, ease of use and power all in one program! Take a quick look at some of the features found in FastTrack Schedule 4.0. Simple scheduling and impressive power are as easy as...1,2,3.

1 Flexibility

- Timescales from Hours to Fiscal Years
- Link Options • Find & Replace
- Paste in Graphics & Add Textblocks
- Custom Bar and Milestone Styles
- Page Breaks • Shift Items in Work Units
- Capture Schedule Defaults • Hide Graph
- Layout Options for Multi-column Reports
- Durations in Work Hours & Work Days

2 Ease of Use

- On Line Help Systems • Tool Tips
- Balloon Help • Action Columns
- Control Palette • Auto Scrolling
- Bar Tracking Window • Select All
- Interactive Page Preview Layer
- Cursor Tracking Window • Quick Corner
- Templates • Floating Toolbox
- Autofit Schedule • Auto Resize Row Height

3 Power

- Scheduled, Revised & Actual Dates
- Custom Work Calendar
- Filters & Sorts • Task Dependencies
- Outline tasks to show sublevels
- Import & Export Data as ASCII text
- Network Versions • File Locking, Passwording
- Available for Macintosh, Power Macintosh, Windows 3.1, NT 3.51, NT 4.0 and 95

Call to order, for more information or download a free demo today!

(800) 450-1983

<http://www.aecsoft.com>

CIRCLE 15 ON READER SERVICE CARD

AEC Software, Inc., 22611-113 Markey Ct., Sterling, VA 20166 USA • Phone (703) 450-1980 • FAX (703) 450-9786 • <http://www.aecsoft.com>
©1996 AEC Software, Inc. All rights reserved.
Windows, Windows 95 and Windows NT are registered trademarks of Microsoft Corporation. Macintosh is a registered trademark, and Power Macintosh is a trademark of Apple Computer, Inc.



LETTERS

Horn of Pentium

IF APPLE WANTS TO *gain* ground, it must port the new Mac OS to Pentium processors ("Intel Inside," April '97, page 19). Let's face it — Windows is here to stay. Sure, the PowerPC is a better, faster chip, but serious corporate users must have the ability to run Windows.

The only way the Mac OS can ever hope to unseat Windows is to compete on the same machine.

Aaron Benson
AB256083@wcupa.edu

I WAS A MAC OWNER for years but eventually had to switch to a PC to be compatible with the rest of my research team. If Apple started selling Rhapsody for Pentium-based machines, I'd be the first in line to buy it.

Patrick Jones
via the Internet

Apple's REM Sleep

AS THE PERSON who developed the concept for the Power Computing Macworld effort, I read your comments on Apple's marketing ("In Your Dreams," April '97, page 17) with considerable interest. I agree completely that Apple's marketing is directionless. The Mac OS is in a fight for survival, and (metaphorically) Apple is sitting up on a hill reading poetry while we're looking around for a board with a nail in it. If I had Apple's ad budget, I could put Power Computing machines on half the desktops in America.

David Bernert
via the Internet

I AGREE WHOLEHEARTEDLY that "Give your dreams a chance" is an amazingly wimpy

slogan, and I'm glad Apple ditched it. The new ads are good, but I think the following is the most obvious response to Micro\$oft's "Where do you want to go today?":

"Where do you want to be tomorrow? Macintosh."

Jeff Raden
jraden@WOCNET.COM

I THINK WHAT APPLE meant was, "Give our dreams a chance."

Adam Masri
masri@nolex.com

Muddy Adobe Future

ADOBE IS PLAYING ITS CARDS close to the vest about its involvement in the new Mac OS, but the company should realize that those of us in the real professional-graphics market are going to stay here in Macville for as long as we can. Here's why:

We already have a lot of money invested in Mac software and are loath to spend thousands more on new software and fonts. We enjoy the interface consistency from application to application that is part of the Mac experience. Our current printers may not be compatible with Wintel boxes. And most important, the Mac is plug-and-play.

As for Adobe, don't you think it's time you figured out who your friends are? Do you realize that if you make any serious money in the Wintel market, you'll one day be forced to reverse-engineer a Microsoft version of Photoshop?

John Lasruk
via the Internet

Bandwidth Blues

YOUR "HOST-IT-YOURSELF WEB SERVERS" article (April '97, page 68) ignored the staggering difference in bandwidth and costs that separate your tests on a simple intranet from the reality of actually delivering live Web pages over the Internet. Your WebBench results have



Open Folder

IN 1632, Galileo wrote *Dialogo Sopra i Due Massimi Sistemi del Mondo*. For our April issue, Henry Bortman wrote "Intel Inside." Because he supported the Copernican notion that the sun, rather than the earth, is the center of the universe, Galileo was brought before the Inquisition on charges of heresy and forced to recant lest he be burned at the stake. Henry can thank his lucky stars that we live in an age of reason, an age when it's no longer heretical to suggest that Apple's new OS should run on Pentium processors. Although his column left a few readers fumbling angrily for their Zippos, most of you echoed the sentiments of Douglas Lee, who felt that Apple, much like the Catholic church of old, would have to abandon a measure of faith in light of scientific fact: Ptolemy out; Pentium in.

Would-be heretic Steve Tyson may be taking this Enlightenment thing a bit far. First there was the separation of church and state, but now Steve is proposing a separation of church and time. As the millennium approaches, some worry that existing databases won't be able to calculate the transition to the year 2000. Steve's solution: "Use 1969, the year of the moon landing, as the base year. The year 2000 then becomes the year 31." Regardless, when the time comes, we hope you don't party like it's 30.

Several other bits of space junk landed in our mailbox this month. We got a letter from the Sputnik Region of the Republic of Kyrgyzstan and one comparing Apple to NASA. The West to Mars Collaborative alerted us to its Web site (<http://www.marswest.org/>) for those who view Mars as "part opportunity, part politics, part science, part adventure, and part destiny." And Strange Voices (<http://www.strangevoices.com/>), a magazine for aliens living on earth, told us of its "assault on the earth-induced boredom that countless extraterrestrials must suffer every day." The editors boast that they'll "tell you exactly what we think they think we should think. We think." Therefore you are . . . Morkin' strange indeed.

WRITE TO LETTERS

c/o MacUser
50 Beale Street, 12th Floor
San Francisco, CA 94105
letters@macuser.com

All letters become the property of MacUser, and we reserve the right to edit any letters we print. Include a return address and a daytime phone number. If you write to us via e-mail, please specify whether you want your electronic address printed.

no bearing on real-world Internet setups, which use a fixed-speed Internet connection and which generate a real-world bill each month.

If you want to report on real-world Web servers and Internet publishing, you should tell your readers about serving with actual 56K, ISDN, and T1 lines. Tell us what it costs to run a Web site, not just the price of the software. Tell us how to get started with a Mac server and then how to enhance and manage it as traffic grows. Tell your readers this one fact over and over: In these days of the Pentium Pro and the PowerPC, real-world Web-site performance is constrained by bandwidth (and bandwidth costs), not by CPU power or software speed.

Because of networking simplicity, a wide range of easy-to-use add-on products, low cost, and — yes — high performance, Mac OS Web servers are frequently the best choice for Web designers, growing businesses, and thousands of others. The article told only a small part of the story.

Mark Kriegsmann, President
ClearWay Technologies

/ The bandwidth of a Web server's connection to the Internet is a topic that deserves full exploration — that's why we left it for future discussion rather than trying to fit it into this story. Had the story covered bandwidth, we would certainly have mentioned ClearWay's FireSite Web-server plug-in, designed to provide near-T1 speeds over 28.8-kbps modems. / KO

The Rocketbook: Scud or Dud?

AFTER READING YOUR REVIEW of the new PowerBook 3400 ("Rocketbook," April '97, page 54), I have to disagree with a couple of cons you mentioned.

As for price, the PowerBook 3400 is only \$500 more than the IBM ThinkPad 760ED. The 3400 has a 3-GB hard drive, a 12x CD-ROM drive, and a 240-MHz processor. The ThinkPad has only a 2.1-GB drive, a 6x CD-ROM drive, and a 133-MHz processor.

And as far as looks go, nothing is better-looking than the PowerBooks.

Greg Gagnon
ggagnon@mindspring.com

THE POWERBOOK 3400's lack of support for 24-bit color is a major omission by Apple. The purpose of the modern laptop is to show slick business presentations. Ever seen those PowerPoint gradients in 8-bit (or even 16-bit) color? Can you say dither? Apple should have

put more effort into color output. I'm afraid this round will go to Wintel (processor speed aside). So close.

Rich Hall
richhall@vysis.com

I JUST READ A REPORT stating that the PowerBook 3400 supports external monitors only in mirror mode. What value is there in having external-monitor support if you simply see the same thing? I can understand that this might be useful for presentations, but what about all of us who rely on dual monitors for development or graphics work?

Terry Worley
terrywo@earthlink.net

/ I guess that's what Apple would call a "third-party opportunity." / AG

Waxing Rhapsodic

YOU TALK ABOUT the dilemma for current Mac developers and make good arguments ("Apple's OS Double Feature," April '97, page 63). But what about the possible advantages Rhapsody will bring? It will allow faster and in some cases much faster application development. It will be easily ported to other platforms. And it will provide new functionality through Objective C. The OpenStep environment offers much to programmers.

Leonardo Burci
via the Internet

APPLE NEEDS TO CONTINUE support for existing OpenStep installations by offering maintenance releases and should also give OpenStep users a clear migration path to Rhapsody that will not require any new hardware investment. Apple should not only make certain that Rhapsody works on all the current platforms but should also go so far as to port it to even more platforms, all the while taking the Macintosh Application Environment and the new Rhapsody API with them.

Apple touts OpenStep as its major entrée into the financial and enterprise markets, but even Rhapsody (as I've seen it articulated so far) isn't going to do as much for these people as the current OpenStep does. Apple *must not* abandon these people. The company needs to have the best OS/environment around, whether it's running on PowerPC hardware, Pentium hardware, Sun SPARC hardware, or whatever.

Brad Knowles
brad@his.com

Mood Indigo

KUDOS TO MACUSER and Brian P. Lawler for "Pressing Issues" (April '97, page 77). However, two errors appeared in the article. Lawler's sources recommended an incorrect value of 212 percent for the Indigo E-Print total ink coverage (TIC). In production situations, Indigo E-Print presses have given an exceptionally strong performance in this area, achieving 360-percent coverage with no hint of problems.

Also, Lawler is only half correct when he says to avoid solids across a fold. Indigo E-Print shops have produced beautiful finished pieces with heavy-coverage rich blacks across a 180-degree fold. The key to success is a commonly available process called "heat scoring." Normally, Indigo E-Print shops have this done by an outside company, and the process is not prohibitively expensive.

Bryce W. Drennan
adamsharmon@webstorm.com

/ My TIC number was based on the suggestions of several Indigo-press owners. Drennan's successes are quite impressive, but it's always wise to ask your press operator for advice on such matters. As for printing across a fold, the suggestion in the article was for toner-based printing; the Indigo E-Print uses "ElectroInk." / BL

Required Reading

I THINK IT SHOULD BE mandatory that all your articles be read by every Apple executive and department head. Yes, your articles are that good.

Scott Davis
via the Internet ☺

Corrections

In "Host-It-Yourself Web Servers" (April '97, page 68), we gave list prices for all the products mentioned except for WebSTAR 2.0, for which we gave an estimated street price of \$499. The list price for WebSTAR 2.0 is \$795.

UMAX S900 systems don't contain two proprietary processor slots, as indicated in "Caveat Emptor" (May '97, page 21). They contain one standard processor slot and one proprietary slot. You can buy non-UMAX upgrade cards for the standard slot.

The Argon Ethernet/modem card ("Rocketbook," April '97, page 54) is made by Asanté.

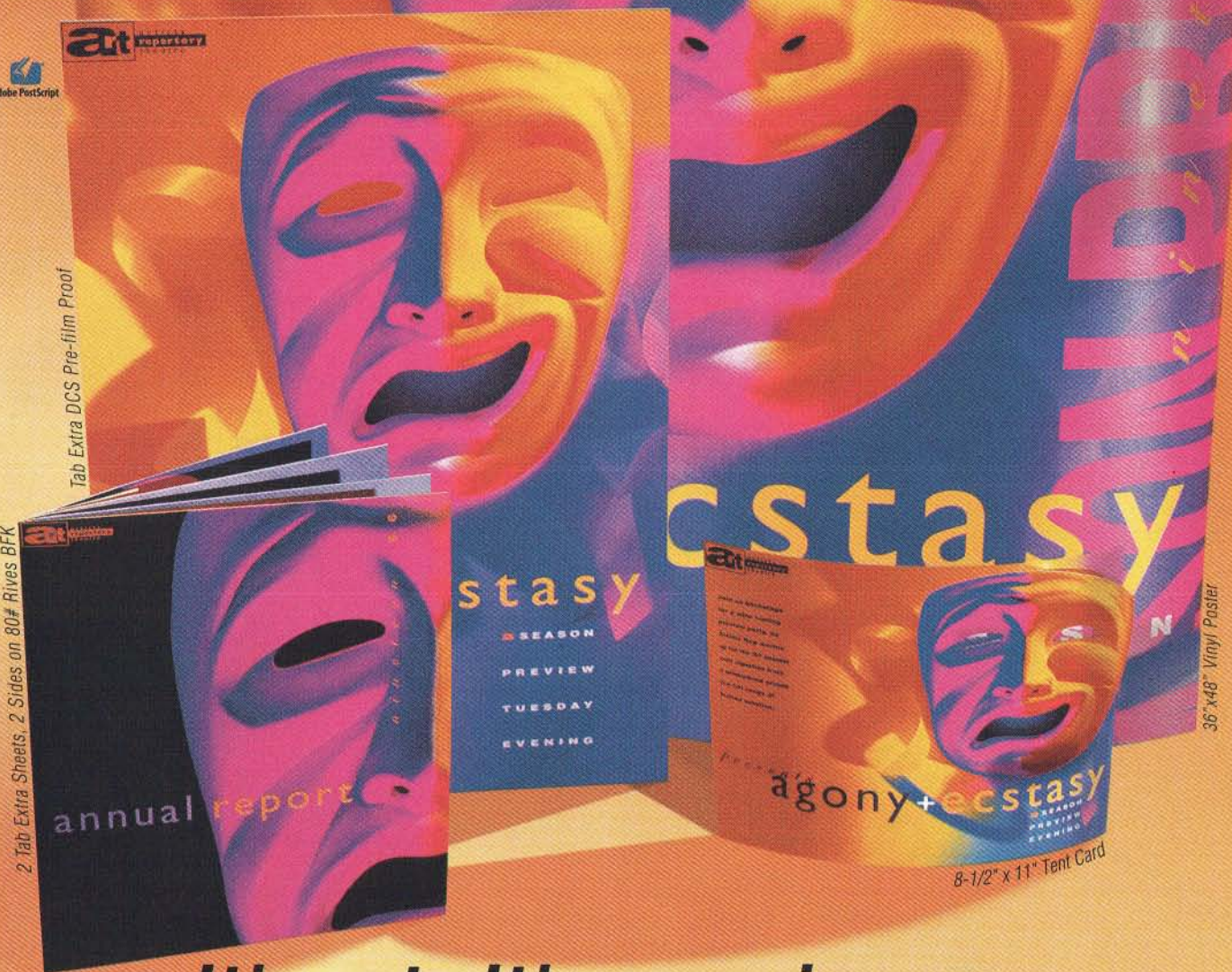
The MacBench 4.0 Floating Point score for the PowerTools Infiniti 3240 Power (Reviews, May '97, page 33) should have been 305.

In "Dual-Processor Systems" (May '97, page 34), the UMAX SuperMac S900DP/200 should have received 4 mice and the UMAX SuperMac S900DP/250 RAID should have received 4.5 mice.

Tab Extra DCS Pre-film Proof

2 Tab Extra Sheets, 2 Sides on 80# Rives BFK

36"x48" Vinyl Poster



It's art. It's your image. Trust it to Tektronix color printers.

More design professionals choose a color printer from Tektronix, the leader in workgroup color printing, than from anyone. It is because they want the richest, most vibrant, and controllable color in the world. The fastest. The brightest. And the most versatile. All these color printers are cross-platform and connect to networks in a snap. They're economical and reliable.



The Power of Color
Call for your free CD.

And they'll make all your comps and pre-film proofs worthy of a standing ovation.

Which one is best for you? Get your free *Power of Color* interactive CD with print samples and find out!



Poster-sized prints
On any paper

NEW Phaser 600



Fastest color
Pennies a page

NEW Phaser 350



Photographic print quality
Letter bleed

NEW Phaser 450



Photographic print quality
Tabloid bleed

Phaser 480X



Brilliant color
Any paper both sides

Phaser 300X

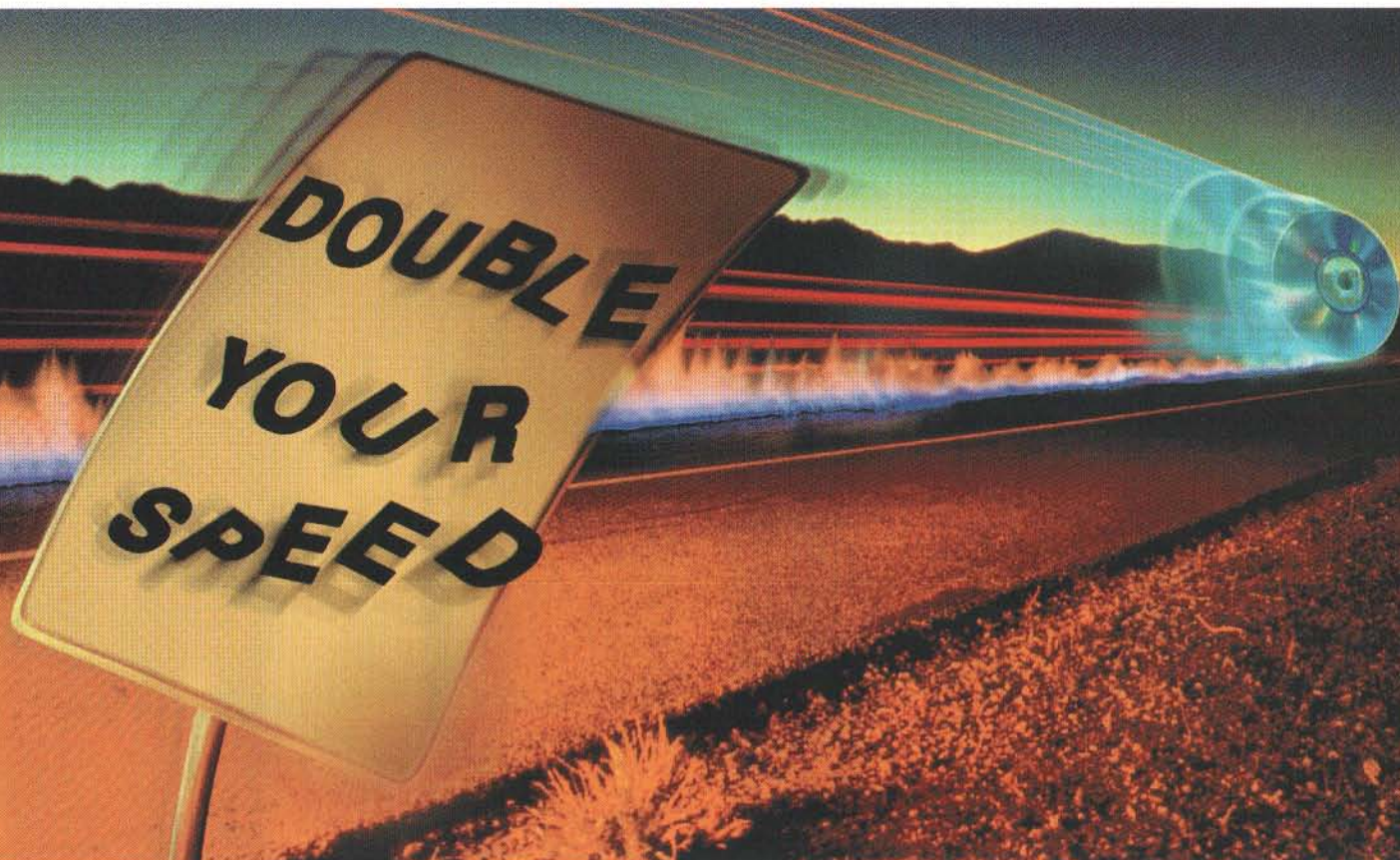


1200 dpi color laser
Office workhorse

Phaser 550

Call 1-800/835-6100, Ext. 1368. <http://www.tek.com/CPad?1368>

Tektronix



Using breakthrough LIMDOW® technology, Maxell brings you super-fast direct OverWrite Magneto Optical Disks.

LIMDOW (Light Intensity Modulation Direct OverWrite) technology boosts writing speeds by up to 100% over current Magneto Optical (MO) disks. That's because it requires only a single pass to rewrite new data to a disk—eliminating the need for erasing.

Now you can transfer data at an impressive 4.0 MB/second, and still have the security and convenience of a removable media with random access. Maxell's line of direct OverWrite MO disks are ideal for data storage, document imaging, file management, and multimedia applications.

On top of doubling your speed, Maxell's LIMDOW disks offer you the highest capacities available—640 MB on a 3.5-inch disk and 2.6 GB on a 5.25-inch disk. Plus, they'll be there for you down the road with durability rated at 1,000,000 rewrite cycles and an archival life of over 30 years! Look for LIMDOW capable drives from Nikon, Fujitsu, Hitachi, Pinnacle Micro, Most, Mitsubishi Chemical, Konica, and others.



Check out Maxell's entire line of data storage solutions. Whether you use floppies, cartridges, cassettes, CDs, optical disks or laser servo disks, you can count on Maxell's quality. Plus, Maxell products are backed by a lifetime warranty.

Put the "pedal to the metal" with the blazing rewrite speeds of Maxell's direct OverWrite MO disks. Got questions? Call our tech support center, or get our FREE product brochure by calling 1-888-2-Maxell (262-9355). Check out our Website at www.maxell.com



maxell

Commercial Products Group

Technology for the next generation.

Maxell Corp. of America, 22-08 Route 208, Fair Lawn, New Jersey 07410
Maxell Canada, 111 Staffern Drive, Concord, Ontario, Canada L4K 2R2 • (905) 669-8107
CIRCLE 22 ON READER SERVICE CARD



ANDREW GORE

The Gateway to Heaven

THERE'S AN OLD RIDDLE that goes like this:

You come to two identical doors with two identical guards in front of them. One is the Gateway to Heaven, the other the Portal to Hell, but you don't know which is which. As you approach, a disembodied voice says, "If you wish to ascend to heaven, you must choose the correct door. To help you determine which door to choose, you can ask one guard one question. However, remember that one guard always lies and the other always tells the truth."

That riddle was in my mind as I listened to Apple executives talk about the company's largest-ever restructuring. I envisioned rank-and-file Mac users lining up before the computer industry's own twin doors of fate — one labeled *Macintosh* and the other *Windows* — trying to figure out which door to choose. Was the Apple restructuring a first step toward recovery? Or was it yet another stop in a sad, slow downward spiral into irrelevance?

To help us decide which door to choose, Mac users also have two guards, or perhaps honor guards would be more apt: In front of the Macintosh door stand the Mac-clone makers; the Mac publications; the ranks of loyal Mac enthusiasts; and, of course, Apple. In front of the Windows door stand Intel; Microsoft; millions of PC users; and, unfortunately, most of the mainstream media.

The question is, what question do you ask to figure out which door to choose?

Let's see what we could ask the PC guards first. An awful lot of hay, and even more sales, is made of the fact that buying a Windows-based computer is safe because that's what most everyone uses. When asked why this is so important, those guarding the Windows door will tell you that it's because there's a lot more software available for Windows.

So perhaps the question you should ask is, How many word processors do you need to write a document? The fact is, there's a lot of software out there for the Macintosh, with

dozens of new software packages and upgrades coming every month. There's hardly a major software product running on Windows that isn't also available for the Mac. Sure, there may be a few vertical-market applications and some games that you won't be able to find, but



if those packages are important enough to you, then you know which door to choose.

Another point the PC community often makes is that the Macintosh can't compete in terms of price/performance. So perhaps the question you should ask is, how many 240-MHz portables run Windows?

The PowerPC-based Mac enjoys an ever increasing speed advantage over its PC brethren. Want the fastest desktop machine or portable? You must buy a Macintosh. As for price, thanks to Mac licensees, a good-quality Mac can be had that's every bit as inexpensive as an equivalently equipped Wintel box.

Then there's the Wintel propaganda machine's most recent bit of doublethink — that Windows is now superior to the Mac OS. So maybe you should ask, Which Windows?

Although many experts talk about Windows 95 and NT as if they were the same thing, they're not. Windows 95 is a mass-market OS with lots of software running on it. However, it hardly qualifies as a "modern" OS, considering that lots of concessions are still being made to accommodate its MS-DOS foundations. NT is a modern OS, but not even Microsoft would claim that it's a mainstream operating system appropriate for casual users.

Meanwhile, Apple has the Mac OS, which with version 8's face-lift, will be, once again, visibly superior to Windows 95. As for NT, it works great as long as you don't touch it. But if you want a server that you can reconfigure on a moment's notice, nothing compares to a Mac OS system. And then, of course, there's Rhapsody and what it will offer in terms of modern OS functionality and object-based development tools.

True Believer

Maybe you'd be better off posing your query to the Mac front. I can think of lots of questions to ask there. Is Apple going out of business? Will the Mac continue to compete in price/performance? Will Rhapsody really arrive on schedule? Will clone vendors continue to support the platform? The only problem is, you can't be sure whether the Mac guard will give you a straight answer. If you get a positive answer, how do you know that it's also a truthful one?

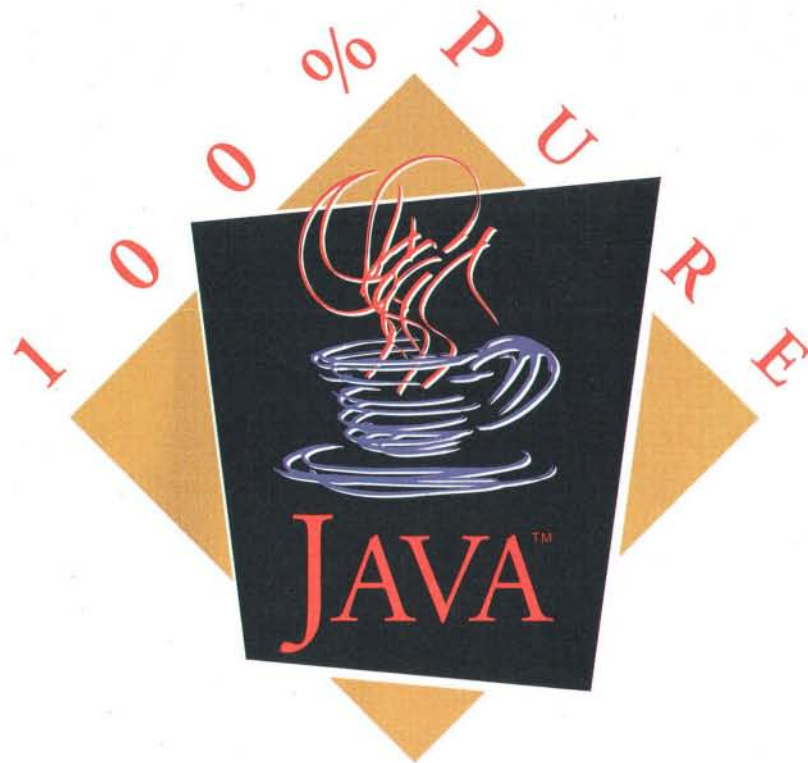
In the original riddle, only one question was guaranteed to get you the answer you needed: "Which door would the other guard say is the Gateway to Heaven?" No matter which door the guard indicated, you'd know that Heaven was actually behind the other door.

If I were standing before the Mac and Windows doors, the question I'd ask is: "Is it safe to buy a Macintosh?"

No matter whom you asked, the only true answer would be No. Why? Because it's never been safe to buy a Mac. Buying a Mac has *always* meant going against the status quo. It's meant taking a risk on something you felt was better in the only way that really counted — for you.

So when you again face the decision of which platform to choose, be sure to ask yourself that question. And follow the answer; otherwise, you know where you could end up. ☒

Andrew Gore, MacUser's editor, is pinch-hitting this month for Pamela Pfiffner, who is on vacation. Pam will return in our July issue.



**It will help thousands of businesses succeed.
Make sure yours is one of them.**

Sun, the creator of Java™, now announces the 100% Pure Java program. It can make your business 100% more competitive by showing you the most powerful way to implement Java technology and services. By developing just one version of a mission-critical application in 100% Pure Java, then deploying it to the various platforms and OS environments on your intranet, your business can stay current and reduce IT expenditures. And soon you will be able to buy 100% Pure Java applications off the shelf and deploy them immediately, anywhere. To find out how 100% Pure Java can help your business, request or download a copy of our definitive **100% Pure Java White Paper** today. Because you can bet your competition will.

<http://java.sun.com/100percent/>
or

<http://www.sun.com/>

Also available by calling 1-800-JAVASOFT



© 1997 Sun Microsystems, Inc. All rights reserved. Sun, Sun Microsystems, the Sun Logo, Java, the Java Coffee Cup Logo and the 100% Pure Java Logo are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries.

CIRCLE 145 ON READER SERVICE CARD

Introducing the MessagePad 2000, the only handheld computer you can actually use.

Of all the handheld computers, only the MessagePad 2000 offers sharp, crisp backlighting and a 16-level, high-resolution gray-scale screen that rotates on command. Which means you can always see your work in the best orientation—horizontal or vertical, even upside down. And in the best light. Bright. Or dim.

The MessagePad 2000 gives you more flexibility, thanks to its two PC slots (other handhelds have only one slot). So, for example, you can dedicate one to a wired or wireless modem and use the other for additional memory.

How much can you do in three to six weeks? That's how long a set of AA batteries lasts under normal usage. Note: normal usage here means a lot. Like having backlighting on, using the modem, crunching numbers, writing e-mail, drawing, doodling, whatever.

Built-in software lets you connect directly to a variety of serial, IrDA and LocalTalk® printers—unlike most Windows® CE devices, which have to be hooked up to a PC in order to print.

There's fast. And then there's fast. The MessagePad 2000 comes with a screaming 160 MHz RISC processor, which offers up to five times the performance of the 20-40 MHz processors you get with other handheld devices.

The usable area of the MessagePad 2000 screen is up to 56% larger than what you'll find on most Windows CE products. So, instead of having to decipher small sections at a time, you can read the entire width of a fax or Web page.

A built-in microphone and speaker let you record and play back voice dictation. And the MessagePad 2000 is the only handheld computer that lets you record and take notes simultaneously.

The MessagePad 2000 works easily with desktop computers. So you can create documents on the MessagePad 2000, then transfer them to and from Microsoft® Excel or Word on any Windows or Mac® OS-based system. Or you can keep your calendar and address book current by synchronizing them with desktop programs like Microsoft Schedule+ 7.0 or Claris Organizer® 2.0. And it's easy: with Auto Dock, the MessagePad 2000 makes these transfers automatically.

Unlike Windows CE-based devices, MessagePad 2000 is the only handheld computer that lets you exchange data with both Windows and Mac OS-based computers.

The MessagePad 2000 handheld computer offers a real detachable keyboard (not a tiny, finger-cramping version). So you can quickly and easily type e-mail, business letters, project reports. Only your superb writing style—not your aching fingers—will determine the length of your documents.

Of all the handheld computers out there, only one makes it truly easy to be productive on the road. Introducing the MessagePad® 2000. Rather than just letting you view data, the MessagePad 2000 lets you carry out sophisticated tasks with the greatest of ease. For example: you can now write a full-length proposal, insert information downloaded from the Web—even include pricing from your company's Intranet—and then fax or e-mail it to a client. Try that with an ordinary handheld computer. The MessagePad 2000 has more power, more storage, more flexibility. All contained within the most innovative design, optimized for usefulness. Of course, there's only one real way to understand how incredible the new MessagePad 2000 is: try it yourself. For the name of a dealer near you, or to get more information, call 800-909-0260. Or visit us at www.newton.apple.com/useit.





HENRY BORTMAN

PPPlease Release Me

"**INSTALL OPEN TRANSPORT PPP,**" my friend Jake told me. "It's really stable. And it's PowerPC-native, so it's fast too."

"OK," I replied. Jake's usually right about these things. "I'll try it."

Although everything he said was true, what he *didn't* say ruined my day.

First, some background. I often work at home. Round about last Thanksgiving, I decided to make the leap to ISDN. Suffice it to say I felt the need for speed. On good days, my ISDN connection lets me dial into my personal ISP at 56 kbps. This makes browsing the Web bearable and downloading my personal e-mail snappy.

Unfortunately, MacUser's communications infrastructure is based on Lotus Notes and I can't access my Notes mail by dialing into my personal ISP; for that I have to dial into MacUser's POP. MacUser, however, doesn't support ISDN dial-in. So in addition to the ISDN terminal adapter I have at home, I also have a 28.8-kbps modem. The ISDN terminal adapter is plugged into my Mac's modem port, the 28.8 modem into the printer port.

To toggle between accessing personal e-mail via ISDN and getting Notes mail by using FreePPP, I have to tell my Mac I'm making five changes: I'm (1) switching ports, (2) switching modems, (3) switching dial-in phone numbers, (4) switching e-mail account names, and (5) switching TCP/IP addresses.

The way I figure it, a good user interface would provide a Connect menu on the menu bar (or perhaps a module on the control strip) that — with a single click — would let me make all five of these changes and would let me dial with one additional click.

I could handle having to do a bunch of nasty setup. Once. Maybe I'd get Jake to do it. Maybe even IS, if Jake were on vacation. But with all the proper IP gobbledygook safely stashed away in some preference file, switching and dialing would be a snap.

Wanna know what it takes to make the switch with Open Transport? Fifteen mouse

clicks, spread across six dialog boxes. And three of those dialog boxes are so well hidden that many users will grow long, white beards before finding them.

I should have heeded the warning signs. Back before I had an ISDN line, I dialed into MacUser with my 28.8-kbps modem. I used MacTCP and FreePPP to accomplish this. But



when Open Transport TCP/IP came out, I decided to try it. Jake recommended it.

He set it up for me too. But I kept mysteriously losing my setup information. Something would screw up, I'd call Jake over to take a look, he'd set it back the way it was supposed to be, and then a few days later — blammo! — it was messed up again.

Eventually I figured it out. (Or maybe Jake did.) You see, the Open Transport TCP/IP control panel, apparently, is *designed* to lure users into screwing up. When you open it up, right there at the top of the dialog box is the inviting label "Connect via:" next to a pop-up menu that contains a list of the various connections you can make. In my case, Ethernet (for my office LAN) and FreePPP (for dial-in) were the two choices available. I figured, OK, if I want to switch from office to home, I pick the appropriate item from the pop-up menu. How simple! How intuitive!

And how wrong! Because when you close the dialog box, you get a message asking you

if you want to save your changes. And if you say yes — which seems like the obvious choice, given that you just *did* change something — you'll destroy your TCP/IP settings. Then you'll have to call somebody smarter than you (like Jake) to come fix it while you stand around trying to maintain your dignity.

I did this several times before Jake discovered the secret: the *hidden* dialog box. The dialog box you're *supposed* to use to switch configurations. The dialog box that lacks any clue whatsoever that it even exists. The dialog box that you can get to only by discovering the Configurations item on the File menu. As if picking Configurations from the File menu were somehow the natural, reasonable course of action whereas making a selection from an alluring pop-up menu staring you right in the face were an obvious path to disaster.

So I should have been prepared when Open Transport PPP, with its PPP and Modem control panels, hit the street.

I wasn't, of course. I naively assumed that Apple would have realized the error of its ways and not only done a better job on the interfaces for these new control panels but fixed the TCP/IP control panel as well.

Wrong again! The PPP and Modem control panels employ the exact *same* idiotic approach as the TCP/IP control panel. The same seductive, treacherous pop-up menus. And the same undiscoverable Configuration dialog boxes. I suppose there's something to be said for consistency. I'm just not sure what it is in this case.

And so it is that to make a simple switch between two different dial-in connections, several times a day I get the pleasure of visiting six dialog boxes and making 15 mouse clicks — where one or two would suffice. This, mind you, from the company that promotes itself as the purveyor of the world's most Internet-savvy platform.

Ah, well. With new versions of the Mac OS rolling out of Cupertino every six months, we can always hope for a brighter future. Take a hint, Apple? ☹

NEWS

Reorg '97: Surgery, Not Butchery

Many jobs lost, but cuts focus on the superfluous: OpenDoc, Cyberdog, Open Transport, and more.

IT'S SPRING; it must be time for another Apple reorganization.

Apple's mid-March restructuring was more hotly anticipated than most, because it was predicted to be one of the most severe in Apple's history. However, although the layoffs were substantial, the number of initiatives destined for the chopping block is modest.

After a string of executive departures, it was widely thought that a devastating cut of products and resources was in Apple's future. However, reality failed to live up to the rabid predictions of the mainstream media: Only 2,700 full-time employees are to be laid off, instead of the predicted 5,000; some 1,400 temporary and contract workers are to be given pink slips as well. According to CFO Fred Anderson, these cuts will bring Apple's overhead in line with anticipated annual revenues of \$8 billion and will ultimately allow the company to return to profitability. Cross your fingers.

Apple CEO Gil Amelio said the company must focus its remaining resources on its core businesses: Mac desktop, server, and portable systems and the Mac OS and Rhapsody. In addition, Apple is admitting that some of its initiatives — such as component-software standards, video-conferencing efforts, and development tools — are better met by other industry initiatives.

Following this reasoning, Apple will no longer invest development resources in OpenDoc, Cyberdog, Open Transport, Game Sprockets, AIX



servers, the Apple Video Conferencing Solution, QuickDraw GX, speech technologies, or Mac OS development tools. Although these technologies will no longer be upgraded and won't be ported to Rhapsody, they will continue to be part of the Mac OS and many will be part of Rhapsody's Mac OS compatibility layer (known as Blue Box).

Apple will also scale back on its previous commitment to deliver two retail versions of the Mac OS every year; it now plans only one release in

1998. However, there will still be two Mac OS maintenance releases each year. According to Apple, Rhapsody is still on schedule for a premier release in early 1998, with a unified release in mid-1998.

More surprising is what products Apple won't cut. The Newton Group wasn't touched — although company spokespersons declined to say whether it intended to sell the division. The Imaging Group was also left intact, as was Claris. Apple said that it will continue to support Pippin licensees and will make sure all QuickTime technologies continue to work on both the Mac OS and Windows. And, although it will no longer develop AIX, the AIX-based Apple Network Servers will continue as part of the company's product lineup.

Countering rumors that Apple would back out of the consumer market, spokespersons said Apple remains committed to first-time buyers, although it has decided to drop the Performa name.

Apple Executive VP of Marketing Guerrino De Luca said the company remains fully committed to Mac OS licensing and would make both Mac OS 8 and Rhapsody available for licensing. However, he admitted that with the arrival of the royalty-free PowerPC hardware platform, which will allow clone makers to build Mac OS systems without paying Apple for the designs, the company will "adjust" what it charges for Mac OS licenses. Let's hope De Luca's adjustments don't hobble a licensing effort that helped erode Wintel market share by three percentage points in the last quarter. / ANDREW GORE

FUTURE TECH

A Big Future for High-Capacity Storage

THE LATEST AND GREATEST disk drive from Seagate, the Cheetah 9, crams 9.1 GB of data onto eight 3.5-inch platters spinning at over 10,000 rpm. Drive technology has come a long way since September 13, 1956, when IBM rolled out the first disk drive, the 305 RAMAC (Random Access Method of Accounting and Control), which stored a grand total of 5 MB on fifty 24-inch platters. The *areal density* — how many bits of information are squeezed into a square inch of disk space — of

the RAMAC and the Cheetah differs by a factor of nearly half a million, with the RAMAC storing 2 kilobits per square inch and the Cheetah packing an astonishing 930 megabits.

The Cheetah uses *magnetoresistive* (MR) heads, based on a technology introduced by IBM in 1991, to achieve its extraordinary areal density and high throughput. MR heads have a rosy future, with densities of 3 to 5 gigabits almost certain to be achieved and a density of 10 gigabits a possibility.

However impressive MR technology is, though, it's about to be eclipsed by two new, even higher-density technologies. IBM has demonstrated *giant-magnetoresistive* (GMR), or *spin-valve*, heads that should be capable of boosting areal densities to around 20-gigabits. And TeraStor (<http://www.terastor.com/>), a Silicon Valley startup that boasts some of the best minds in the storage business, recently announced *near-field* recording, a magneto-optical technology that, according to TeraStor representatives, will allow for an areal density of 100 gigabits or more — well over 50 million times that of the 305 RAMAC you've been saving for your next garage sale. / RIK MYSLIEWSKI

New Entry-Level Power Macs:

Four new lines feature software from Adobe, MetaTools, and Microsoft and hardware from ATI, Avid, and Iomega.



CHRISTMAS DIDN'T COME for Apple last year; the Performa line's expected contribution to the troubled company's coffers failed to materialize. Sales were sluggish — except in Europe, where Apple had taken a radically different approach to selling its consumer-level Macs. Instead of identifying Performas by name and number, as it did here in the U.S. (the Apple Macintosh Performa 6400/180, for example), Apple identified European Performas by the tasks they were designed to perform, not as mere agglomerations of megahertz and megabytes. In '90s corporate-speak, Europeans were offered solutions.

Apple learned. This spring, it is jettisoning the name *Performa* and clustering its consumer-level Macs into four solution-oriented classes: the Home Macintosh, Small Business Macintosh, Apple Creative Studio, and PC Compatible Macintosh. The Home, Small Business, and Apple Creative Studio lines introduce the Power Mac 6500, a greatly improved version of the lackluster Performa 6400. The Small Business and PC Compatible lines also include bundles based on the Power Mac 4400/200 (see review in this issue).

MacUser Labs tested a prerelease version of the hardware platform that underlies most of the new solution-based offerings, the Power Mac 6500, and found it to be a hearty competitor to low-cost clones. The Power Mac 6500 is based on a PowerPC 603e and is available in 225-, 250-, and 275-MHz versions, with a 300-MHz version to appear later this year.

Each Power Mac 6500 comes with a minimum

of 32 MB of EDO RAM (the Small Business configuration sports 48 MB), a 3.0-GB-or-larger hard drive, a 256K or 512K L2 cache, a 12x CD-ROM drive, a 33.6-kbps modem, 16-bit Surround Sound with a subwoofer, and 2 MB of graphics RAM. When we fired up our test unit, a Power Mac 6500/275, we were most impressed with its graphics performance — a result of its having an ATI RAGE II + DVD chip, which accelerates QuickDraw, QuickDraw 3D, QuickTime, and QuickTime MPEG.

THE HOME MACINTOSH. The new Power Mac 6500 appears in at least two guises designed for home users; more may be added later. The 6500/250 with a 4-GB hard drive and a Zip drive is \$2,299; the 6500/225 with just a 3-GB drive is \$1,999. (The Performa 6400/180 and 6400/200 will continue to be offered through the summer.) The Home Macintosh software bundle is substantial, featuring everything from ClarisWorks 4.0 to Edmark's Thinking Things 3.0, with a versatile Internet bundle and a gaggle of accelerated-3-D games thrown in for good measure.

THE SMALL BUSINESS MACINTOSH. Two bundles are tagged as small-business solutions: The Power Mac 6500/250 with 48 MB of RAM, a 4-GB hard drive, and a Zip drive costs \$2,599, and the Power Mac 4400/200 with 32 MB of RAM and a 2-GB drive is \$1,999. What distinguishes the Small Business line is its software, capped by Microsoft Office and including Now Up-to-Date & Contact, Norton Utilities, and much more.

THE APPLE CREATIVE STUDIO. There's only one Apple Creative Studio bundle, but it's a good one: a Power Mac 6500/275 with a 4-GB hard drive



The new Apple Power Macintosh 6500 is a vast improvement over the lackluster Performa 6400.

(no Zip drive), an Apple TV Tuner card, and an Avid Cinema PCI card for \$2,999. It also comes with a creative bundle that features Avid Cinema software; Adobe PageMill; Cubasis AV, from Steinberg; Fractal Design Dabbler; 3D World, from Microspot; and more.

THE PC COMPATIBLE MACINTOSH. The fourth new solution is a bit of a yawner: a Power Mac 4400/200 for \$2,399 that has a 2-GB drive and 40 MB of RAM — 24 MB on the motherboard and 16 MB on an Apple-manufactured Compatibility Card that's equipped with a 166-MHz Cyrix 586 Intel-compatible microprocessor. As a final admission that the world is changing, the PC Compatible Macintosh comes with Windows 95 already installed on the hard disk, ready for you to start humming "Start Me Up." / RIK MYSLEWSKI



THE SPEED SOLUTION / new Power Mac 6500/275 leapfrogs the competition

IT'S A SEESAW BATTLE for the title of top-performing consumer Mac. For the first time in ages, Apple systems have the advantage over other low-cost Mac OS systems — at least until the next round of upgrades appears. Except for its abysmal drive speed (which should improve dramatically before final units hit the shelves), the new Power Mac 6500/275 more than holds its own.

MACBENCH 4.0 SCORES

	POWERPC/ CLOCK SPEED	RAM	SIZE OF L2 CACHE	PROCESSOR	FLOATING POINT	DISK	PUBLISHING DISK	GRAPHICS	LO-RES PUBLISHING GRAPHICS	CD-ROM	
Apple Power Mac 6500/275	603e/275 MHz	32 MB	512K	384	354	101	107	318	314	458	
REFERENCE SYSTEMS											
PowerTools Infiniti 3240 Power	603e/240 MHz	32 MB	512K	374	315	240	234	306	314	340	
Power Computing PowerBase 240	603e/240 MHz	16 MB	256K	309	319	213	175	288	279	286	
APS M-Power 603e200	603e/200 MHz	16 MB	256K	282	273	131	155	258	248	281	
Apple Performa 6400/200	603e/200 MHz	16 MB	256K	258	262	163	167	242	218	304	
				SCORE	BETTER	SCORE	BETTER	SCORE	BETTER	SCORE	BETTER

Best performer(s) in each test.

MacBench 4.0 scores are relative to those of an Apple Power Mac 6100/60 with a 30-MHz memory bus, a 250-MB hard drive, 2 MB of built-in graphics RAM, and no L2 cache. This baseline system is assigned a score of 100 for all MacBench tests. All systems are tested as configured by vendors but with AppleTalk turned off and virtual memory turned on. We set the screen resolution to 640 x 480 pixels with a bit depth of 8 bits (256 colors).

NEW & NOTABLE

Fractal Design Painter 5. More than 100 new natural-media brushes, new dynamic plug-in floater layers, and a more intuitive interface mark this upgrade of Fractal's popular painting software. Also new are multiple-alpha-channel capability and Web-savvy tools. \$449; upgrade, \$99. Fractal Design: 800-846-0111 or 408-430-4000; <http://www.fractal.com/>.

▼ **mTropolis 2.0.** The latest version of this powerful multimedia-authoring tool supports Web



playback, using mFactory's mPire browser plug-in. Create your own authoring wizards and tools for such tasks as debugging and optimizing multimedia titles. Included are new mPacks, libraries of premade elements and behaviors. \$995; upgrade, \$199. mFactory: 888-622-8669 or 415-548-0600; <http://www.mfactory.com/>.

Vision 3.5 and Studio Vision Pro 3.5. Opcode's MIDI-sequencing and digital-audio-playback tools are now PowerPC-native, handle QuickTime files with no conversion needed, and support Adobe Premiere plug-ins. The Pro version also supports Digidesign's Pro Tools III PCI cards. Vision 3.5, \$399; upgrade, \$99. Studio Vision Pro 3.5, \$995; upgrade, \$129.95. Opcode Systems: 800-876-1376 or 415-856-3333; <http://www.opcode.com/>.

Natural Scene Designer. Create 360-degree QuickTime VR panoramas with this software's tree generator, fractal-landscape generator, and ray-tracing renderer. Includes U.S. Geological Survey and NASA data converted into 120 3-D models. \$299. Natural Graphics: 916-624-1436; <http://www.naturalgfx.com/>.

CameraMan 3.0. This screen-capture utility is now PowerPC-native and boasts advanced captioning capabilities, timeline editing, multiple-monitor support, and an improved interface. \$69.95; upgrade, \$25. Motion Works Group: 800-565-5582 or 604-685-9975; <http://www.mwg.com/>.

MicroNet ADVCD16E. The first 16x CD-ROM drive, this half-height external drive has an average access time of 150 milliseconds and data-transfer rates of up to 2.4 MB per second. \$275. MicroNet Technology: 800-800-3475 or 714-453-6100; <http://www.micronet.com/>. / BROOKE C. WHEELER

FIRST LOOKS

Netscape Communicator

IT'S NOT FAR-FETCHED to say that the Internet is what it is today largely because of Netscape Navigator, the pioneering browser that brought the excitement of the World Wide Web into people's homes — and, by getting the attention of Microsoft, made the Web a battleground in a high-stakes, high-profile business war.

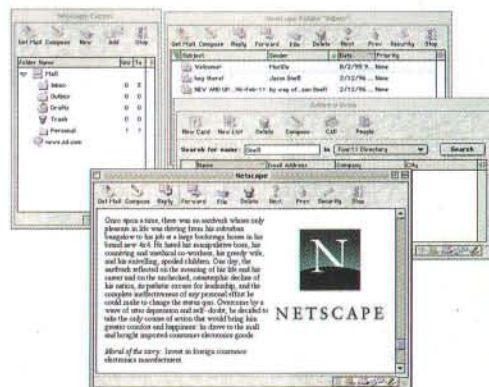
Ironically, that same Navigator was the first victim of the Microsoft/Netscape war. Late this spring, it will be absorbed into Netscape Communicator 4.0, a suite of components that Netscape is hoping will best not only Microsoft's Internet Explorer but the likes of Lotus Notes as well. We took a look at the latest beta version of Communicator 4.0, dubbed Preview Release 2, to see what chance Netscape may have.

The following five elements are the core of what Netscape is calling Netscape Communicator Standard Edition:

NETSCAPE NAVIGATOR. Among Navigator's new HTML features are support for multiple layers on an HTML page (letting Web authors create complex, dynamic CD-ROM-style interfaces, just with HTML code), absolute positioning of objects on a Web page, support for Web style sheets for sprucing up even the dullest HTML page, and the ability to embed custom typefaces in Web pages. Hard-core Web-heads will also be pleased to know that Navigator uses Symantec's Just-In-Time Java Compiler — Navigator now runs Java applets up to ten times as fast as before. (Symantec's compiler is still not as fast as the Metrowerks Java compiler used in Internet Explorer 3.0, however.) Navigator can also automatically download and install plug-ins when it encounters a page requiring a plug-in you don't already have.

NETSCAPE MESSENGER AND COLLABRA. The e-mail slice of the Communicator pie is Netscape Messenger, mail client software that supports both POP and the emerging IMAP mail protocol. Messenger's interface is a vast improvement over that of Navigator's old e-mail client software. You can now display mailboxes and messages in separate windows instead of in one multipaned one. You can sort mail into mailboxes based on various rules and look up addresses you don't know via the LDAP protocol. Collabra, Netscape's news client software, sports a similar interface.

NETSCAPE COMPOSER. Formerly Navigator Gold, Netscape's HTML editor is now called Netscape Composer. Netscape emphasizes that Composer is not meant to compete with high-end HTML tools such as Adobe PageMill but rather is meant for the day-to-day creation of HTML-based e-mail and newsgroup messages and for the creation and editing of simple Web pages.



Netscape Messenger offers a much improved e-mail interface and HTML-based mail messages.

BETWEEN THE LINES / BY ANDREW GORE

Power CEO Says It's Time to Evolve

JOEL KOCHER, who recently took over as CEO of Power Computing, may be a newbie to the Mac market, but with some 17 years in the PC market, he brings a unique perspective to the Macintosh-clone business. I sat down with him a few days before Apple's Great Layoff of '97 to get his take on the state of the Mac, Mac cloning, and the future of Power Computing.

AG. What do you feel are the strengths and weaknesses of Power Computing?

JK. I don't think there's any question what the strengths are — award-winning products and technology are clearly the reasons that Power has

succeeded to the degree it has.

However, Power Computing has growing pains — and that probably comes as no surprise to some of our customers out there. Our less-than-consistent execution is unacceptable to me, primarily because it's unacceptable to our customers.

AG. Given your PC background, what do you think of the current state of the Mac market?

JK. I view the computer business as having been through Darwin's theory. If you look at the Wintel space, 15 years of extreme head butting and competition have created organisms that have extremely tight and streamlined economic models,



4.0: It's big, it's powerful, it's big, it's full-featured, it's big.

Composer supports HTML tables and a few other HTML features, but its feature set doesn't come close to that of any stand-alone HTML editor.

NETSCAPE CONFERENCE. The final piece of the Communicator puzzle is Conference, a voice-conferencing and shared-white-board app. Unlike the rest of Communicator, Conference is a separate application and wasn't yet available at press time.

Netscape Communicator Standard Edition will be available in a similar way to Navigator 3.0: It's free for anyone to download, but if you're not part of a nonprofit or educational institution, you're expected to pay for it after a 90-day evaluation period.

The challenger to workgroup programs such as Lotus Notes will be Netscape Communicator Professional Edition, which will add an Internet-based group calendar, automatic administration features for IS managers, and a Java applet that links Navigator to IBM-3270 mainframes. Expect to see it — and the Standard Edition — this summer.

Although we found the preview release of Communicator extremely unstable, we've come to expect such instability from Netscape's alpha and early beta software. Of greater concern is the size

PROS: Makes all Internet features available in one interface. Dramatically improved news and mail interface. Powerful new extensions to HTML.

CONS: Large, RAM-hungry. Slow. No way to deinstall components you don't want.

INFO: Netscape Communications: 415-937-3777; <http://home.netscape.com/>.



Among improvements to Netscape Navigator is support for precision HTML layout and layered documents.

of Communicator — it weighs in at 6.5 MB. If you just want to use Navigator for Web browsing, you're out of luck — you can't selectively remove the parts of Communicator you don't want. What's even worse is that Communicator requests a minimum of 10 MB of RAM (14 MB is recommended) — although Netscape expects the final RAM requirements to be somewhat less. In contrast, Internet Explorer 3.0 occupies 1.8 MB and 4 MB of RAM is recommended. (Microsoft's Internet Mail and News client software, which is a separate, optional application, needs an additional 1.1 MB of disk space and 2 MB of RAM.)

It's somewhat disappointing that Netscape has chosen this — dare we say Microsoft-ian? — philosophy of creating monolithic, do-everything applications. But if you want to use only one application for browsing the Web, reading e-mail, trolling through newsgroups, and creating simple Web pages, Netscape Communicator can deliver it all.

— JASON SNELL

much tighter management of inventory and other assets, and rapid time to market. The Mac market has not evolved through that same 15 years of extreme competition.

AG. So the Mac market is the Galápagos Islands of computerdom?

JK. Exactly. But whereas the Galápagos Islands are isolated and yet perfectly content, that's not acceptable for us. The good news is that Apple is beginning to do the right things. Certainly licensing was one of the right things. And I've seen Apple improve its time to market over the last year, which I know is a direct result of the fact that there have been other players within the Mac space.

AG. What do you think is going on at Apple vis-à-vis clones?

JK. We believe Apple is committed to licensing

over the long term, and the primary reason it is committed is because Mac customers have clearly stated that it's important to them.

Now, having said that, CHRP puts everyone onto a more equal footing. As we all move to CHRP, the way that Apple extracts its licensing fees and executes its licensing program naturally has to change. That's not a negative thing.

AG. What's in the future for Power Computing?

JK. As you know today, our product line, though broad within the context of the desktop computer, has not broadened into the mobile market and the server market. And as we both know, the mobile market is exciting and a place Power needs to be.

[For the unabridged version of this interview, go to <http://www.macuser.com/onlinecol/kocher.html>. — Ed.]

IN BRIEF

Tantalizing QuickTime 3.0

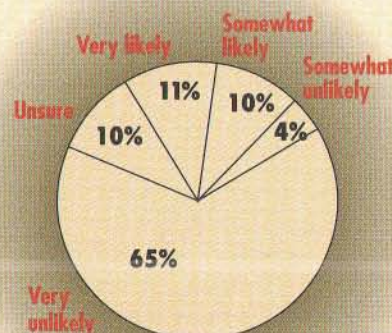
THE MORE DETAILS that trickle out about the soon-to-be-released QuickTime 3.0, the better it looks. The latest version of Apple's cross-platform media technology is slated to include real-time effects rendering, Java integration, the ability to stream VR content over the Web, direct support for Windows .AVI files, and a lean-and-mean sprite-handling capability that will be ideal for Web-based animations. / RIK MYSLEWSKI

Mac OS 8: It's Baaaack . . .

APPLE MUST HAVE a pile of "Mac OS 8" T-shirts left over from when the name was reserved for the never released Copland OS — why else would it revive the name for its next OS upgrade, previously code-named Tempo, scheduled to ship in July? To be fair, Mac OS 8 is impressive, with integrated Internet services, interface improvements, and a multitasking PowerPC-native Finder, but we still have to wait for Rhapsody for the truly revolutionary overhaul. / RIK MYSLEWSKI

Intel Inside? Not!

Q. APPLE'S AVIE TEVANIEN has said that Rhapsody, Apple's new OS, will run on Intel as well as PowerPC chips. How likely is it that once Rhapsody ships, you'll buy a PC or compatible based on an Intel chip on which to run Rhapsody?



Andy Grove, Intel's CEO, won't find comfort in our latest online poll. Mac aficionados are enamored not only of the Mac OS but also of the PowerPC processor on which it runs. / RIK MYSLEWSKI

A Font for Sore Eyes



FINALLY — a font designed for your Web browser. Peter Fraterdeus created Browser Font, ZDNet Mac's June exclusive utility, to make browsing easier on the eyes. Browser Font looks great on-screen, even in bold or italics. Browser Font is available free, beginning March 31, exclusively from ZDNet Mac Download on the Web (<http://www.macdownload.com/>) and on CompuServe (GO ZMC:MACUSER). / PHILIP DYER

The Mac OS. It does. It will. *you can.*

At Apple, we started with one simple goal: to make it easier to do the things you want to do. Over the years, the Macintosh® operating system has helped millions of people do just that, by providing a simple, intuitive approach that makes all aspects of computing easier. But even more impressive than what a Macintosh can help you do today is what it will help you do tomorrow.

It does more than ever.

So what does the future of the Mac® OS look like? For a glimpse, check out our newly released Mac OS 7.6. It's faster than ever before—so you can start your Mac, launch applications, save files and print up to 40% faster.



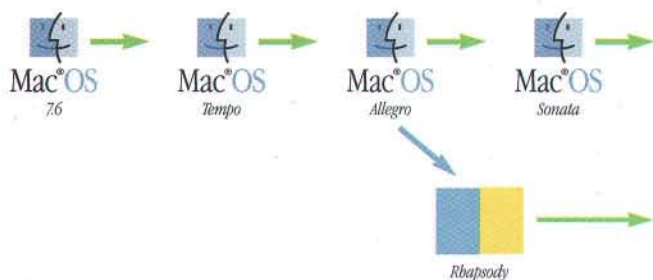
The Mac you buy today won't be obsolete tomorrow. Because Rhapsody will be compatible with all currently shipping Mac OS systems.

Connecting to the Internet is easier too. With the latest version of the Apple® Internet Connection Kit (it includes Netscape Navigator™ 3.0 and other Internet tools), you're one step away from accessing the Net. Or, if you prefer, you can use AOL or our own Apple Cyberdog™—they're included with Mac OS 7.6 along with TCP/IP and PPP.

Mac OS also has the latest version of Apple QuickTime®, the industry standard for multimedia creation and delivery. And it makes upgrading easier: with one CD-ROM and a streamlined installation process.

Intrigued? Then you'll love what comes next. Because we're hard at work on the next version of the Mac OS, code-named Tempo. Right from the start you'll notice a new look, with beveled buttons, icon drop shadows and other 3-D enhancements to the desktop. Tempo will dramatically improve system responsiveness by incorporating multitasking, multi-threaded functionality and native PowerPC™ capabilities directly in the OS. So you can run multiple applications more smoothly, and launch new applications while files are copying in the background. Tempo extends our Internet capabilities with easy

The Mac OS Report. One in a Series.



Apple's complementary operating systems—Mac OS and Rhapsody—allow you to choose the system that best meets your needs. They also allow you to decide when it's time to make the transition.

setup, personal web sharing and built-in Java.[™] And it will help you be more organized, by reducing on-screen clutter with spring-loaded folders and pop-up windows for frequently used items.

Of course, Tempo also paves the way for further updates to the Mac OS. Because there's much more to come.

It will be the NeXT thing.

When we began defining a new software architecture that would take us into the future, we had two clear objectives: to enhance our traditional strengths, and to create an operating system that would leapfrog the competition, setting standards into the next century.

Enter NeXT.[®] By acquiring NeXT Software and adopting their kernel-based architecture, Apple can offer advanced system services such as true multitasking, protected memory and symmetrical multiprocessing. We have also strengthened our position in client-server and Internet/Intranet markets. And NeXT's object-oriented development environment and powerful tools such as WebObjects[™] and Enterprise Objects Framework[™] give us clear advantages in the creation of new solutions.

Merging NeXT and the Mac OS will create a next-generation OS that will give our competitors something new to catch up to. It will be an OS that helps developers create breakthrough applications by allowing greater experimentation and efficient reuse of code. It will include the best of our graphics technologies, such as ColorSync[®] and QuickDraw[®] GX. And we plan to adopt the Adobe[®] PostScript[®] imaging model as well. It will fully support the QuickTime Media Layer. It will provide industrial-strength reliability, performance and ease of use. And it will be an ideal platform for publishing, multimedia and Internet applications yet to come.

What is the name of this new OS? Its code name is Rhapsody.

It will be an Apple thing.

Rhapsody will leave other operating systems in the dust. But not Apple customers. To start with, Rhapsody will enhance the general look and feel of today's Mac OS interface. It will support all currently shipping Mac OS-based systems. It will run the vast majority of existing Mac OS applications by hosting the complete Mac OS on the Rhapsody kernel.

In short, Rhapsody will run your existing applications and utilities, read your files, recognize your current fonts and extensions and play your movies and sounds. Rhapsody will deliver the kind of technology you expect from Apple. The kind of technology that appeals to anyone who requires the highest performance for publishing, Internet and multimedia authoring, and scientific and technical work. The kind of technology that appeals to people who like to, well, get things done.

You can.

What does all this mean? It means you can do everything you're used to doing now, plus a few things you might not yet imagine. It means you can buy a Mac today and not worry about its compatibility with Rhapsody tomorrow. It means Rhapsody won't just be a new way to use a *Macintosh*—it will define an entirely new way to use *computers*. You can learn more by visiting us at www.macos.apple.com or by calling 800-538-9696 for information by fax.



The world's most intuitive and easy-to-use operating system will remain just that. With regular system updates and enhancements, the Mac OS will take you well into the future.



The acquisition of NeXT provides Apple with additional strengths in performance, reliability, network management and rapid application development.



Mac OS 7.6 extends Apple's leadership in graphics and multimedia by bringing together the latest versions of Apple QuickTime technologies, collectively known as the QuickTime Media Layer.



Adobe PostScript

Apple intends to adopt the Adobe[®] PostScript[®] imaging model for Rhapsody and transfer the best of our existing graphic technologies, including ColorSync and QuickDraw GX.



NEW & NOTABLE

Canon PowerShot 350. ▼ A compact addition to Canon's digital-camera line, the PowerShot 350 sports a .8-inch color LCD screen, automatic flash with red-eye reduction, and a macro mode. Adjustable

JPEG-compression levels allow you to store 11 to 47 images at 640-x-480-pixel resolution on a 2-MB CompactFlash card. \$699. Canon Computer Systems: 800-848-4123 or 714-438-3000; <http://www.powershot.com/> or <http://www.ccsi.canon.com/>.

Texture Creator 2.0. This renamed upgrade to Adobe TextureMaker generates natural-looking, tilable textures. You can modify 200 preset textures — using lighting controls, color, and transfer modes — or create originals with the Texture Wizard feature. \$129.99; upgrade from Adobe TextureMaker, \$79.95. Three D Graphics: 800-913-0008 or 310-553-3313; <http://www.threedgraphics.com/>.

Number Nine Imagine 128 Series 2. Boost 2-D/3-D graphics and full-screen-, full-motion-video performance with this 128-bit accelerator card. Equipped with 8 MB of VRAM and a 250-MHz DAC (digital-to-analog converter), it also supports wide-screen-monitor resolutions of up to 1,920 x 1,200 pixels. \$799. Number Nine: 800-438-6463 or 617-674-0009; <http://www.nine.com/>.

SmartMove. This plug-in for Adobe Photoshop simplifies moving and storing image files across a network, with up to 10:1 compression. It automatically compresses and relocates images (or QuarkXPress documents that contain images), according to your specifications, in its task-handling interface. \$695. M. E. Aslett Corp. (MEAC): 908-225-1922; meac25@aol.com.

Portrait PageMaster LCD. Sleek and lightweight at 10.2 pounds, this 15-inch backlit LCD monitor (which includes the required PCI graphics card) swivels between portrait and landscape views and delivers an optimized resolution of 1,024 x 768 pixels. \$1,799. Portrait Displays: 800-858-7744 or 510-227-2700; <http://www.portrait.com/>.

Newer Technology CardCam. This petite Type II PC Card captures 16-bit QuickTime video in resolutions from 160 x 120 to 320 x 240 pixels and supports PAL as well as NTSC video sources. In addition, its software has settings for time-lapse still-image captures saved as PICT files and for motion-sensitive video captures. \$399. Newer Technology: 800-678-3726 or 316-943-0222; <http://www.newertech.com/>. / BROOKE C. WHEELER

Wall-Socket Laptop

Potent portable hamstrung by power-hungry processor.

YOUR MOTHER WARNED YOU that if something sounded too good to be true, it probably was. So it is with the imediaEngine, from Canada's Vertegri Research. At first blush, the imediaEngine — the first Mac OS laptop clone — is an impressive product; a closer look, however, reveals an Achilles' heel that may limit its popularity to a well-heeled few.

The imediaEngine's specs are spectacular: The machine's Motorola-developed motherboard is powered by either a 200-MHz or a 240-MHz 604e PowerPC microprocessor, providing it with significantly more oomph than the 240-MHz 603e Apple offers in its top-of-the-line PowerBook 3400. What's more, the imediaEngine comes with either a 12.1-inch or 14-inch LCD screen, powered by an ATI chip set fed by 2 MB or 4 MB of graphics RAM — a setup that provides up to 24-bit color at 640 x 480, 800 x 600, or 1,024 x 768 pixels — a clear winner over the PowerBook 3400's 1 MB of graphics RAM, which limits Apple's offering to 16-bit color on its 800-x-600-pixel 12.1-inch LCD screen.

The graphics and processing superiority of the imediaEngine are clues to its target market: traveling professionals who need the ultimate in portable presentation power. However, those presenters had better not need to make any

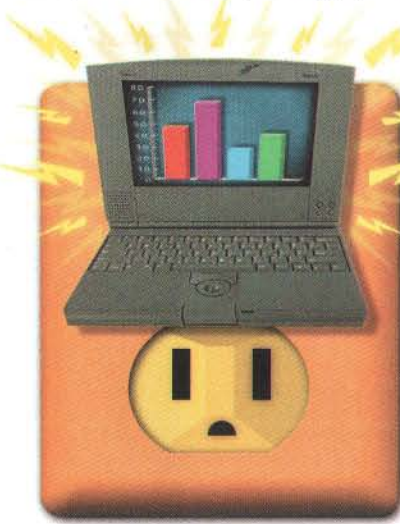
changes to their Astound, Persuasion, or PowerPoint slides en route to their million-dollar meetings, because the imediaEngine doesn't run on batteries — you need to plug it into an AC outlet for it to do its high-powered magic.

A PowerPC 604e can consume about four times the power of a 603e with equal clock speed. Add the power demands of the imediaEngine's large backlit LCD as well as of its display circuitry, graphics RAM, 3.5-inch hard drive, 10x CD-ROM drive, and four-speaker sound system, and you can understand why an internal battery would be sucked dry in minutes rather than hours.

Even without an internal battery, the metal-cased imediaEngine (with titanium and leather highlights) weighs in at a hefty 10.5 to 12.3 pounds — and at an equally hefty \$4,983 to \$7,894. Still, if you're lugging around a desktop Mac for your high-

powered presentations, the imediaEngine may be the answer to your dreams — and your aching back.

Vertegri has also announced the Quicktower E² desktop series, which features hot-swappable, removable-drive bays and — like the imediaEngine — is based on the Tanzania logic board. Vertegri Research: 800-622-9611 or 604-688-6792; <http://www.paulgossen.com/>. / RIK MYSLEWSKI



THE OFF BEAT

It's Supposed to Suck



LORD ONLY KNOWS what sort of aging flotsam resides beneath your keyboard keys. Dust, saltine crumbs, nail clippings? You can either simply rearrange that nameless crud with a can of compressed air or suck it up for good with the little vacuum cleaner with the big name: the Metro Data-Vac MicroSweep Model MS-4. Its anteateresque nose is also handy for dedusting printers, fax machines, phones, and other vulnerable equipment and can be fitted with either of two brushes or a crevice tool. It's got reusable filters, so \$24.95 will be all you'll ever spend for perpetual keyboard hygiene. Metropolitan Vacuum Cleaner: 800-822-1602 or 914-357-1600.

/ BROOKE C. WHEELER

FIRST LOOKS

Astound 3.0:

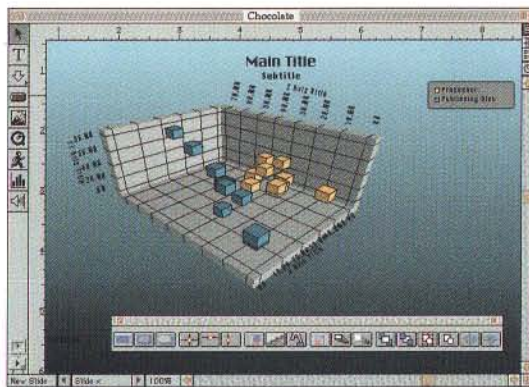
Agile presentation maker.

THIS MULTIMEDIA WORLD may be getting ever more complex, but Astound's animated presentation software remains refreshingly simple and powerful. Our first look at a beta version of Astound 3.0 uncovered a quiet integration of timely new features and rich cross-platform playback options.

The most notable new feature in version 3.0 is its ability to export presentations to HTML. Layout integrity is fully retained, without the mysterious reshuffling of text and objects that HTML export often causes. The conversion process does remove some effects, such as text drop shadows and automatic animation and sound playback. In the HTML presentation, QuickTime movies and sounds are converted into images that hyperlink to original movie and sound files — you need to click on them for playback. Version 3.0 also ships with a player that supports Windows 3.1, 95, and NT 4.0 playback.

One fun new feature is animatable 3-D charts. You can import data from Excel or enter it in Astound's Datasheet and then translate it into one of a selection of 3-D charts. You can then edit the chart, rotate it as a wire frame, or animate it with a selection of automated presets.

When Astound 3.0 ships this spring, it will include 100 new preanimated templates and Web templates. Unfortunately, our beta version came sans templates, so we can't comment on the new designs.



Astound 3.0's new 3-D-charting module lets you animate a selection of pie, bar, column, and line charts.

Despite the improvements in version 3.0, some version 2.0 drawbacks still haven't been addressed, such as the inability to import formatted outlines or text files directly from a word processor. Also, you can't extrude text, clip art, or objects that weren't created by Astound's object tool, and you can't flip or rotate imported clip art. Improving existing features seems to have been overshadowed by adding new ones. / BROOKE C. WHEELER

PROS: HTML export retains layout integrity.

Fun 3-D animation. Cross-platform playback.

CONS: Can't extrude text. Can't flip or rotate clip art. Can't import outline-formatted word-processor files.

INFO: \$249; upgrade, \$99. Astound: 888-427-8686 or 415-845-6200; <http://www.astoundinc.com/>.

Strata's Upgrade Too Little, Too Early

IF YOU'RE THINKING of upgrading to Strata StudioPro 2.0, think again — and then wait for version 2.1 to arrive this spring.

Before Strata shipped the long-awaited upgrade to its full-featured modeling, rendering, and animation program, it promised major new features such as a scanline renderer, particle systems, inverse kinematics, and a completely redesigned timeline animation interface (see "Strata StudioPro 2.0," April '97, page 24). Unfortunately, what it delivered fell far short of the mark. Not only are many of the major new features (including the new rendering and particle systems) not even included in version 2.0 but the sheer number and variety of

bugs also make version 2.0 almost useless for serious production work.

Although Strata has posted a 17.9-MB updater on its Web site (<http://www.strata3d.com/>), the version available to us at press time (2.0.1) solved none of the bugs we'd discovered. What's more, the included Read Me file informed us of a gaggle of problems we hadn't even run into yet. To its credit, Strata has announced that it will ship a debugged version that includes the promised — but missing — functionality in May. We recommend waiting until then to upgrade to StudioPro 2.0 — just as we're holding off on our review of it until Strata gets its act together. / DAVID BIEDNY

MACINTOSH PRICE INDEX

THE UNITED COMPUTER EXCHANGE index reflects average sales prices of new and used Macs as of March 3, 1997. Prices (other than those for compact models, Performas, and LCs) do not include a monitor or a keyboard. The United Computer Exchange is a national clearinghouse of used microcomputer equipment.

MAC MODEL	NEW	USED
LC III (4/80)	•	\$175
IIx (5/80)	•	\$175
IIci (4/80)	•	\$200
IIfx (4/80)	•	\$225
Quadra 610 (8/160)	•	\$450
Quadra 650 (8/230)	•	\$500
Quadra 800 (8/230)	•	\$675
Quadra 840AV (8/230/CD)	•	\$825
Quadra 950 (8/230)	•	\$800
Power Mac 6100/66 (8/350/CD)	•	\$625
Power Mac 7100/80 (8/700/CD)	•	\$800
Power Mac 7500/100 (16/1GB/CD)	•	\$1,150
Power Mac 8100/100 (16/1GB/CD)	•	\$1,175
Power Mac 8500/120 (16/2GB/CD)	•	\$1,500
Power Mac 9500/132 (16/2GB)	•	\$1,750
PowerBook 180 (4/120)	•	\$675
PowerBook 540c (4/320)	•	\$1,100
PowerBook 5300cs 100 (8/500)	•	\$1,500
Duo 280c (4/320)	•	\$750
Duo 2300c/100 (8/750)	\$1,499	\$1,100
Power Computing Power 100 (16/1GB/CD)	•	\$650
Power Computing PowerWave 604/150 (8/1GB/CD)	•	\$1,400

• = discontinued model

For more pricing information on these and other models, call 800-755-3033 or 770-955-0569 or visit <http://www.uce.com/>. And find it on ZDNet, in Library 1 (Special Reports) of the MacUser Forum (GO ZMC:MACUSER).

The Geek Beat

RHAPSODY. Under an agreement with Apple, Metrowerks will provide tools for developers making the transition from Mac OS to the NeXTstep-based Rhapsody OS. A new tool, CodeWarrior Latitude (due later this year), will ease porting to Rhapsody, and a new version of the CodeWarrior development environment scheduled to coincide with Apple's Rhapsody release will run on Rhapsody-based systems.

FILEMAKER PRO. Claris' FileMaker Pro Server is now available for Windows NT. \$999. Claris: 800-544-8554 or 408-727-8227; <http://www.claris.com/>. Web Broadcasting has released Web FM 3.0 (\$245), a rewrite of the Web-server plug-in. Web FM serves FileMaker Pro databases via a Mac Web server. A new Web Broadcasting product, PICT FM (\$125), converts PICTs stored in FileMaker container fields into JPEG images, which can be viewed from a Web page. Web Broadcasting: 415-329-9676; <http://macweb.com/>.

WEB-SERVER PLUG-INS. WebX (\$495), from MacXperts, is a Web server plug-in that links a Mac-based Web site to an Oracle7 database. According to MacXperts, WebX is the only Web-server plug-in that supports heuristic processing. 800-356-8040 or 804-353-7122; <http://www.macxperts.com/webx/>. / SHELLY BRISBIN

REVIEWS

Mac OS systems pop up everywhere

New Power Macs debut in the midst of many new clones.



AMID ANOTHER FLURRY of low-cost offerings from Mac OS licensees, Apple has overhauled its Power Mac lineup and introduced the first in a line of consumer Power Macs — the 4400/200. To sort out the new equipment, we used MacBench 4.0, the industry-standard benchmark for measuring the speed of Mac OS systems. We looked at three Apple models — the Power Mac 4400/200, 7300/180, and 9600/200. (The remaining newcomers in Apple's line, the Power Mac 7300/200, 8600/200, and 9600/233, were not available for testing at press time.)

We also tested the APS M•Power 603e180 (desktop) and 603e240 (minitower), the Motorola StarMax 3000/180 DT (desktop) and MT (minitower) and StarMax 3000/240 MT (minitower), and the UMAX SuperMac C500/180 (desktop). Read on for our findings.

Apple Revamps Its Line

Apple's new heavyweight Mac is the Power Mac 9600/200. It has a larger footprint than either the Power Mac 9500 or 8500 and is distinguished by a hump atop its case.

The 9600's new case design, the same as that of the 8600, at long last gives users easy access to the interior of Apple's top-end systems. Inside, Apple has upgraded some basic components: The 9600 has a speedy (12x) CD-ROM drive; a fast, 4-GB hard drive; and an IMS

TwinTurbo graphics card with 4 MB of graphics RAM. The effect of these upgrades shows in the 9600's MacBench 4.0 Publishing Disk and Lo-Res Publishing Graphics scores. But because the 9600's processor, a 200-MHz PowerPC 604e, is identical to that in the



From left: UMAX SuperMac C500/180, Apple Power Mac 9600/200, and Apple Power Mac 4400/200.

9500, the 9600's Processor score is no better than that of its predecessor.

What's more, the 9600 still costs disproportionately more (\$3,700) than the comparable Power Computing PowerTower Pro 200 (\$2,895) and UMAX SuperMac S900/200 (\$3,399).

Inside and out, the Power Mac 7300/180 looks just like the Power Macintosh 7600/132, which it supersedes. The only visible difference is the absence of a video-input port. The Power Mac 7300's familiar hinged housing lifts to reveal a 2-GB hard drive and a 12x CD-ROM drive. The 7300 comes standard with 2 MB of graphics RAM, expandable to 4 MB. Although the 180-MHz 7300 we tested looks like a speed demon compared to the mothballed 7600, it's no faster than Power Computing's similar 180-MHz PowerCenter 180, which is \$100 cheaper and comes with a better software bundle.

a 512K L2 cache, a speedy 2.7-GB drive, and 4 MB of VRAM, the StarMax 3000/240 MT costs \$300 more than Power's PowerBase 240 but significantly outperforms that system in nearly every MacBench 4.0 test. Particularly noteworthy is the high Floating Point score, a result of a new floating-point library developed by Motorola. This should have a positive effect for 3-D imaging. Finally, the StarMax 3000/240 MT, like other 3000 models, includes a 28.8-kbps modem; APS' M•Power and Power's PowerBase systems lack modems.

It's worth noting that some of the StarMax 3000/240 MT's speed is due to Mac OS 7.6, which comes preinstalled, and to Motorola's inclusion of Connectix's Speed Doubler 2.0. Mac OS 7.6 and Speed Doubler will boost speed on other systems too.

APS' M•Power 603e240 turned in a good Processor score. Its drive, however, is slower than those in Motorola's and Power's comparable models. APS also provides only 1 MB of VRAM, which accounts for the low Hi-Res Publishing Graphics score. At \$1,799, with a relatively weak software bundle and no modem, this system is no bargain.

Apple's Non-Performa

The Power Macintosh 4400/200 is a basic small-business/home machine. It has the

REVIEWS RATING KEY

★★★★★	OUTSTANDING
★★★★	VERY GOOD
★★★	ACCEPTABLE
★★	POOR
★	SERIOUSLY FLAWED
☹	DANGEROUS

Low-Cost Machines Multiply

Motorola's StarMax 3000/240 MT will easily satisfy cost-conscious graphics pros and Web and multimedia authors. Tricked out with 32 MB of RAM,

same Tanzania logic-board design as the APS M•Power and Motorola StarMax product lines and contains a PowerPC 603e running at 200 MHz. The Power Mac 4400 comes with 16 MB of RAM, an IDE hard drive, an 8x CD-ROM drive, and a 256K Level 2 cache. Overall, its speed is on a par with that of the 180-MHz clones from Motorola and UMAX. The Power Mac 4400 includes a 2-GB drive, compared to the low-capacity 1.2-GB models in most competitors' systems. It also has a 10BASE-T Ethernet port but no modem. The 4400's software contains only Internet-connection software and the Mac OS. It's a solid machine, but its \$1,799 price is simply too high.

The Motorola StarMax 3000/180 MT, at \$1,395, was the most expensive 180-MHz PowerPC 603e system we tested for this review, but it's the only such system that comes with 32 MB of RAM and a 2.7-GB hard drive. Other 180-MHz models, including Motorola's own desktop StarMax 3000/180, have 16 MB of RAM and a 1.2- or 1.4-GB hard drive. The StarMax 3000/180 MT outperformed its competition in all but the graphics tests. In the Hi-Res Publishing Graphics test, both StarMax 3000/180s suffered from their lack of a second megabyte of graphics RAM; they ship with only 1 MB each. The StarMax 3000/180s lack Speed Doubler, but like the StarMax 3000/240, each ships with System 7.6, a 28.8-kbps modem, and an excellent software bundle.

The UMAX SuperMac C500/180 has a low

profile, being only 4 inches high and 2 to 3 inches narrower than typical desktop systems. But its price, \$1,349, is toward the high end of the range for similar systems and, other than support for SRS Surround Sound, this has little justification. Its software bundle is solid, but the C500 doesn't come with a modem.

The lowest-priced 180-MHz system, the APS M•Power 603e180, was also the slowest, largely because its base configuration doesn't include an L2 cache. Given that APS doesn't bundle a modem with this system and that its software bundle is adequate but not outstanding, consider other systems carefully before being seduced by its rock-bottom price. If you do opt for this system, buy it with an L2 cache.

The Bottom Line

Apple has caught up to its rivals in terms of system speed. And the new easy-access design of the Power Mac 9600 is a welcome relief. Apple's hardware configurations and software bundles, however, still don't justify the relatively high system prices. Motorola, on the other hand, has learned a few things since it introduced the StarMax line. It is delivering fast, well-configured consumer and small-business systems with an outstanding software bundle. UMAX's SuperMac C500/180 is a solid addition to the consumer market. APS, however, is cutting a few too many corners in its attempt to be the bargain-price leader.

/ Henry Bortman and Shelly Brisbin

MAC OS SYSTEMS

Apple Power Mac 4400/200	★★★
Apple Power Mac 7300/180	★★★★
Apple Power Mac 9600/200	★★★★★
APS M•Power 603e180	★★★
APS M•Power 603e240	★★★★
Motorola StarMax 3000/180 DT	★★★★
Motorola StarMax 3000/180 MT	★★★★★
Motorola StarMax 3000/240 MT	★★★★★
UMAX SuperMac C500/180	★★★★

Apple Power Mac 4400/200, \$1,799; **Apple Power Mac 7300/180**, \$2,300; **Apple Power Mac 9600/200**, \$3,700 (estimated street). **Company:** Apple Computer, Cupertino, CA; 800-538-9696 or 408-996-1010; <http://www.apple.com/>. **Reader Service:** Circle #401.

APS M•Power 603e180, \$1,199; **APS M•Power 603e240**, \$1,799 (direct). **Company:** APS Technologies, Kansas City, MO; 800-374-5681 or 816-483-1600; <http://www.apstech.com/>. **Reader Service:** Circle #402.

Motorola StarMax 3000/180 DT, \$1,249; **Motorola StarMax 3000/180 MT**, \$1,395; **Motorola StarMax 3000/240 MT**, \$2,195 (list). **Company:** Motorola Computer Group, Tempe, AZ; 800-759-1107 or 512-434-1526; <http://www.mot.com/GSS/MCG/>. **Reader Service:** Circle #406.

UMAX SuperMac C500/180, \$1,349 (list). **Company:** UMAX Computer, Fremont, CA; 800-232-8629 or 510-226-6886; <http://www.supermac.com/>. **Reader Service:** Circle #419.



SWIFT NEW SYSTEMS? / measuring newcomers' speed

We used MacBench 4.0 to measure the speed of nine new Mac OS systems in their base configurations as shipped to us by the vendors. Motorola shipped its systems with Mac OS 7.6, Apple and UMAX systems came with System 7.5.5, and APS systems came with System 7.5.3. We tested with virtual memory on and AppleTalk off; due to a bug in the Mac OS, we had to turn virtual memory off for the disk tests on the Motorola StarMax 3000/240 MT and UMAX SuperMac C500/180.

The Graphics and Lo-Res Publishing Graphics tests were performed at a screen

resolution of 640 x 480 pixels and a bit depth of 8 bits per pixel and the Hi-Res Publishing Graphics test at a resolution of 1,152 x 870 pixels and a bit depth of 8 bits per pixel. The SuperMac C500/180 did not support the resolution required to run the Hi-Res Publishing Graphics test.

MacBench 4.0 scores are relative to those of an Apple Power Mac 6100/60 running System 7.5.5, with 16 MB of RAM, a 250-MB hard drive, 2 MB of graphics RAM, and no L2 cache. This system is assigned a score of 100 for all tests.

MACBENCH 4.0 SCORES

	PROCESSOR	FLOATING POINT	DISK	PUBLISHING DISK	GRAPHICS	LO-RES PUBLISHING GRAPHICS	HI-RES PUBLISHING GRAPHICS	CD-ROM
Apple Power Mac 9600/200	409	403	363	342	508	478	529	485
UMAX SuperMac S900/200	408	404	323	249	531	522	599	352
Apple Power Mac 7300/180	330	361	168	177	383	374	402	460
UMAX SuperMac J700/180	376	363	181	187	468	429	489	340
Motorola StarMax 3000/240 MT	376	468	342	241	324	326	359	373
APS M•Power 603e240	338	299	137	157	293	277	201	272
Power Computing PowerBase 240	309	319	213	175	288	279	333	286
Motorola StarMax 3000/180 MT	298	373	240	227	248	251	174	330
Motorola StarMax 3000/180 DT	287	373	200	188	253	249	181	335
Apple Power Mac 4400/200	284	272	195	185	280	278	319	315
UMAX SuperMac C500/180	268	251	200	191	277	246	*	281
APS M•Power 603e180	207	227	109	138	175	173	157	215
Power Computing PowerBase 180	271	254	204	174	252	254	294	280
	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER

*Test not run.

Adobe PageMaker 6.5



Web tools, support for layers highlight significant upgrade.

LET'S GET THIS OUT OF THE WAY: Forget the whole "Quark killer" thing. The addition of frames in Adobe PageMaker 6.5 begs for comparisons to frames-based rival QuarkXPress, but PageMaker 6.5 is its own program. New features such as built-in layer management and Web-savvy HTML export put the venerable page-layout program in a class of its own. Throw in interface refinements that unquestionably stamp this version as part of the Adobe software family, and PageMaker 6.5 shapes up as a significant — if not sweeping — upgrade.

The Face Is Familiar . . .

The first thing you notice when exploring PageMaker 6.5 is the program's new look. Adobe's stated goal was to make PageMaker more consistent with stablemates Photoshop and Illustrator. Reorganized menus, new tools, tabbed palettes, and remapped keyboard

shortcuts aim at creating interface consistency with Adobe's graphics applications.

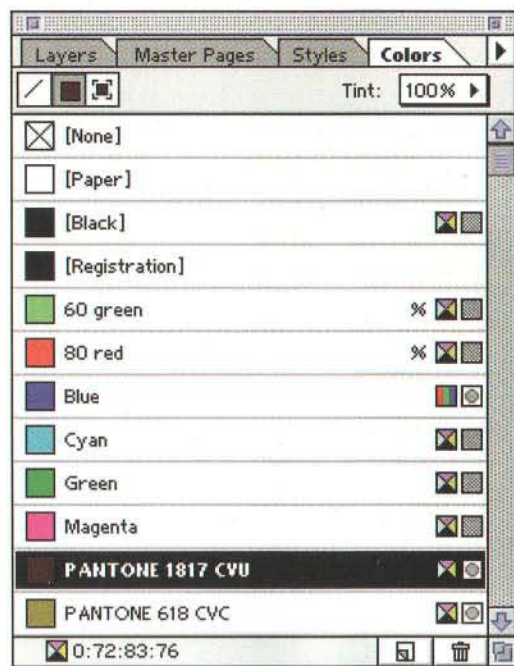
This standardization effort yields mixed results. PageMaker veterans will doubtless experience short-term frustration at having to relearn often-used keyboard command equivalents, such as those for paging through documents and showing and hiding guide rules. (Our fingers started to learn the new commands within a few days, after many referrals to the supplied cheat sheet.)

Conversely, Photoshop and Illustrator users who are new to PageMaker will appreciate familiar keyboard shortcuts and will also be right at home when using the program's new palettes, which adopt the convenient tabbed design introduced in Illustrator and Photoshop. This design allows you to consolidate multiple palettes into one and "roll them up" by double-clicking on their title bars.

Although we generally like the new palettes in PageMaker 6.5, we wish they used less desktop real estate. When active (that is, "rolled down"), they're considerably bigger than their predecessors in PageMaker 6.0. This may cause headaches for users of smaller monitors or older Macs.

Finally, you'll notice some changes to PageMaker's menus. The Arrange menu is now a subentry in the Element menu. And the View menu, formerly a submenu under Layout, has been promoted to the menu bar. View embraces such options as page views, zoom levels, master-page items, and guide displays.

The View menu is largely self-explanatory, and you'll probably get used to it quickly. However, we have a couple of gripes about the way it is set up: The oft-used commands for Actual Size, Fit in Window, and so on are buried several items down on the menu. Far more



The main function of PageMaker's Colors palette is unchanged, but thoughtful design enhancements make it much more useful: CMYK and RGB colors (which can now coexist within a document) are denoted by the icons to the right of their names, and when you select a color, the percentages of its component colors are reflected at the bottom of the palette.

troublesome, the Display Master Items command violates the menu's logic: It is the only command on the menu that affects a page's content, rather than simply the way it appears on-screen. Hiding master items actually removes them from the page in question. This command would be better off elsewhere — or nowhere, since multiple master pages could be used to the same end.

You've Been Framed

The new feature that will attract the most attention in PageMaker 6.5 is the addition of QuarkXPress-like frames. PageMaker's Tools palette now contains two columns of tools for creating geometric objects: The column on the left contains the rectangle, ellipse, and polygon icons familiar to PageMaker 6 users; these are still used to create graphic elements. The tools in the right column look (and behave) just like those in the left, except each bears an X in the center of its icon. You use these tools to create frames that can contain either text or graphics.

You use the Frame Options dialog box to control the appearance of frame contents (alignment and inset of text and graphics and scaling and clipping of graphics). In an awkward twist, you must set the stroke and fill



Layers, frames, and revamped palettes are among the highlights of PageMaker 6.5. Frames, which can be used to create irregularly shaped graphics and text blocks like those on the sample page, are created with the toolbox items marked with X in their icons; the Layers palette makes it easy to experiment with placement of elements on your pages.



EVEN BLACK
AND WHITE CAN
BE COLORFUL.
WHEN IT'S GCC.

Photo: Jim Krantz

PUT THE POWER OF GCC BLACK AND WHITE PRINTING RIGHT AT YOUR FINGERTIPS. 1200 DPI. ACCUGRAY FOR SUPERIOR HALFTONES. UP TO 11.69" x 20" FULL BLEED OUTPUT WITH REGISTRATION AND CROP MARKS. THE GCC ELITE XL PRINTER SERIES.

1-800-422-7777

 **GCC**
TECHNOLOGIES
www.gcctech.com

CIRCLE 101 ON READER SERVICE CARD



attributes of the frame itself separately, via the Element menu. Another annoyance: Once applied, you can't undo Frame Options settings. And although you can use keystrokes to invoke Frame Options, we'd like to be able to access it by double-clicking on a filled frame as well. Ultimately, we'd like to see a Frame palette.

The main purpose of PageMaker frames (aside from making the program more accessible to QuarkXPress users) is for creating structured documents with repetitive text and graphics: You can easily template pages by placing empty frames on them and then simply pouring text into them later.

Frames can also be used to create circular or polygonal text without resorting to inside-out text wraps and other time-honored PageMaker tricks. The kinks aren't worked out of this yet, however. Trying to align headline text precisely within a circular frame — something that's easy to do in QuarkXPress — took more steps and kludgy workarounds than should be necessary.

The Layered Look

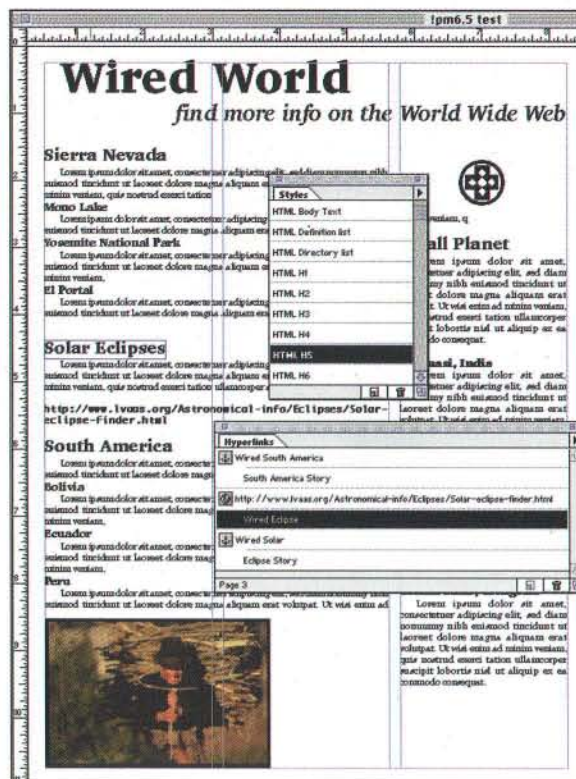
Two palettes new in PageMaker 6.5 embody the most-significant changes found in this upgrade: layers and hyperlinks.

PageMaker 6.5's frames may not be quite on a par with those of QuarkXPress, but PageMaker's layers support really shines — and, yes, bests that of QuarkXPress. The Layers palette lets you assign text and graphics to different layers. You can view or hide layers independently, merge them, and lock their contents to protect them. Reordering layers and moving objects among layers — even to and from multiple layers at the same time — is a simple drag-and-drop affair.

PageMaker's layers controls are fast and flexible, and for all their power, they're remarkably simple — although we *would* like to see keyboard shortcuts for moving between layers, à la Photoshop. QuarkXPress offers no comparable layers support (although you can approximate it with the QX-Tools XTension, from Extensis).

Links

The program's new Hyperlinks palette extends the online capabilities introduced in version 6.0, and it significantly strengthens PageMaker's usefulness for authoring electronic documents. The Hyperlinks palette allows you to attach a URL, e-mail address, or FTP link to a text or graphic element within your



Web-page authors will appreciate additions in PageMaker 6.5 that make it easier to adapt print documents for online use: The Styles palette comes pre-equipped to allow you to assign HTML tags to text on your pages, and the Hyperlinks palette enables you to attach a URL or other Web link to any page element. In this example, the headline outlined in blue is being linked to a related page on a remote Web site.

PageMaker file. What's more, it also lets you create *internal* hyperlinks in your publications — linking an entry in the table of contents to the appropriate page, for example.

The power of PageMaker's hyperlinks becomes evident when you tap the program's beefed-up capabilities for exporting electronic documents: Hyperlinks are preserved when you output your documents as Adobe Acrobat PDF (Portable Document Format) files or when you use PageMaker's HTML export function.

PDF and HTML export are features carried over from PageMaker 6.0, but version 6.5 offers several improvements. In keeping with Acrobat's new support for in-line QuickTime movies, you can now paste a QuickTime movie into your PageMaker document and know that it will appear in exported PDF files. (If you print your PageMaker file, the movie's poster frame appears in the appropriate spot.)

Exporting PageMaker files is relatively easy: PageMaker automatically converts graphics to GIF or JPEG format and maps document styles to HTML styles. You can also elect to have your PageMaker multicolumn layout preserved — within limits — via the use of HTML frames. We were able to transform a multipage PageMaker publication into a Web page, complete with links to related Web sites, in about 30 minutes.

The inherent limitations of HTML mean

that advance file preparation is necessary, however: HTML doesn't honor PageMaker-generated graphics such as tint boxes, nor does it support irregular text wraps or images that run across a spread. And when you're using tables-based layout preservation, HTML frames don't resize automatically to different-sized browser windows. For truly satisfactory HTML results, you'll probably need to modify your document with these restrictions in mind before you export it.

These slick electronic-document features give PageMaker a leg up on QuarkXPress, for which the QuarkImmedia XTension aims to provide similar capabilities. QuarkImmedia has more bells and whistles, but it's an expensive add-on. For straightforward Web-page creation, PageMaker 6.5 — and a little patience — can do the trick.

The Bottom Line

PageMaker purists may be dismayed by the number of changes made to the program's interface, but the new functionality, including improved electronic-document support, frames-based layouts, and — especially — the Layers controls, more than compensate. If you haven't tried PageMaker lately, take a look at version 6.5. / Pamela Pfiffner

Adobe PageMaker 6.5, \$895 (list). **Company:** Adobe Systems, San Jose, CA; 800-422-3623 or 408-536-6000; <http://www.adobe.com/>. **Reader Service:** #403.



While you're sitting there, something is happening in the world. It's called "the news." With PointCast, the Internet news network, you can get it broadcast straight to your desktop: weather updates, world news, sports, stocks, industry news and more. And suddenly your computer screen is transformed into a dynamic, multi-colored newswire complete with flying headlines, vibrant graphics and scrolling stock ticker. PointCast is completely customizable so you can get exactly the news you want. CNET awarded it the Best Internet Application of 1996 and *The Wall Street Journal* gives PointCast "must-have" status for in-the-know computer owners." You can find PointCast at your local retailer or download it free at www.pointcast.com.

Your live [news] feed from the world



Have you seen it?
**free
download**

[www.pointcast.com]

PointCast™ Your desktop newscast.



Epson Stylus Color 600



Epson Stylus Color 800



1,440 dots per inch add up to outstanding print quality.



THE NOTION OF photo-realistic output from a sub-\$500 inkjet printer would have seemed a joke as little as a year ago. But Epson has achieved this ambitious goal — twice. The Stylus Color 600 and Stylus Color 800 combine a new print-head technology, reformulated inks, and record-setting 1,440-x-720-dpi resolution to deliver output that will suit casual home users, small graphics and design shops, and business users looking for high-quality output. What's more, the new printers overcome the sluggishness that has plagued high-resolution inkjet printers up to now.

Setting up either printer requires snapping in a black-ink tank and a color-ink tank (with separate cyan-, magenta-, and yellow-ink compartments). Install the tanks carefully. You can't reinstall them if you need to remove them — to ship your printer somewhere, for example. We prefer removable, reinsertable ink cartridges such as those used in Apple, Canon, and Hewlett-Packard printers.

Among the chief differences between the Stylus Color 600 and 800 are options for connecting the printer to your computer. Both can connect directly via a serial cable (not included), but only the 800 supports LocalTalk (\$149) and Ethernet (\$499) networking options. The 800 also has a higher-capacity black-ink tank and faster serial-port speed than the 600. A greater number of print-head nozzles enables the 800 to print faster too. Optional PostScript software (\$99) should be available for the 800 by the time you read this.

Features

The Stylus Color 600 and 800 debut a new Epson piezoelectric print-head technology that uses electrostatic attraction to make ink adhere to the page. This technology differs

from the thermal-print technology used by competing printers (and earlier Epson models), in which ink is heated to force droplets to spray out of nozzles and onto the page. The new print-head design effectively eliminates splatter associated with thermal heads and allows for smaller, more consistently shaped dots. The new fast-drying, smudge-resistant ink formula also provides vibrant color.

Both printers are capable of 360-x-360-, 720-x-720-, and 1,440-x-720-dpi output. Plain copier paper can be used for most jobs, but 1,440 x 720 dpi can be achieved only on Epson Photo Quality Ink Jet media and Photo Quality Glossy media/film.

Along with improvements in hardware design, the Stylus Color 600 and 800 ship with a revamped printer driver. Once you specify an

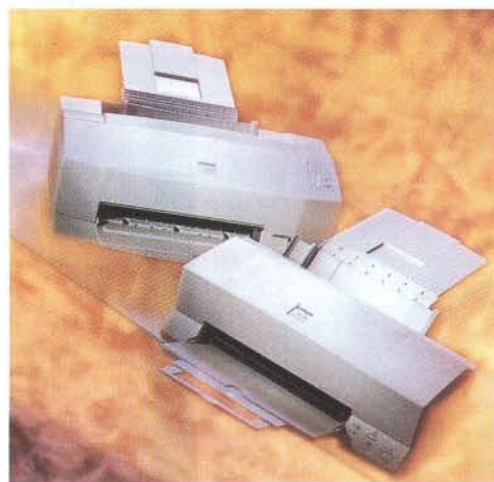
within the driver, but its automatic setting will probably suffice for 90 percent of your jobs.

Our testing yielded impressive speed results for the two printers, as the accompanying charts attest. The Stylus Color 600 consistently played catch-up to the 800 in each of our tests and took as much as 75 percent longer to print a given file than the 800.

Output Quality

For text, the printers provide sharp, crisp type with a truly dense black ink. Solid colors used for graphics looked vibrant and didn't mottle our paper, even when coverage was heavy.

But the printers' impressive text and graphics output couldn't prepare us for the Stylus Colors' outstanding photographic output. Images printed at 1,440 x 720 dpi on Epson coated paper easily topped output from the current crop of rival inkjet printers. And when we printed on Epson's glossy media, the output looked remarkably like a photograph.



Epson's new Stylus Color 800 (top) and 600 offer remarkably good output quality.

The Bottom Line

The race for inkjet-printer quality and speed has a pair of new front-runners. The Epson Color Stylus 600 and 800 provide the best under-\$500 inkjet performance and quality we've seen. We were impressed by the 800's speed over the 600's and by the 800's available options. The 600 is great for home/small-business use, but we recommend spending the extra \$150 for the superior speed and flexibility

of the 800. / Tony Bojorquez

Epson Stylus Color 600, \$299; **Epson Stylus Color 800**, \$449 (estimated street). **Company:** Epson America, Torrance, CA; 800-463-7766 or 310-782-0770; <http://www.epson.com/>. **Reader Service:** Circle #404.



HIGH RES AND HIGH SPEED? / timing Epson's new color printers

To gauge the speed of Epson's new color inkjet printers, the Stylus Color 600 and 800, we connected each to the serial port of a Power Mac 7600/132 and timed how long it took to print a variety of documents. We used the printers at all their supported output resolutions on a variety of media. Our Text test, which was conducted at 360 dpi on plain inkjet paper, entailed printing a 20-page, text-only Microsoft Word document. The Business Graphics test (720 dpi, coated paper) involved outputting a 3-page Word file containing text and graphics. For the Handout test (720 dpi, coated paper), we printed a 4-page Microsoft PowerPoint presentation with heavy color coverage. The QuarkXPress test (1,440 dpi, glossy paper) involved printing a complex page containing photographic images and multiple fonts. The Transparency test called for output of the first two pages of our PowerPoint file at 360 dpi on Epson transparency media.

	TEXT	BUSINESS GRAPHICS	HANDOUT	QUARKXPRESS	TRANSPARENCY
Epson Stylus Color 800	7:52	3:42	9:13	6:48	4:31
Epson Stylus Color 600	13:44	6:23	15:52	7:41	7:36
	MINUTES SLOWER	MINUTES SLOWER	MINUTES SLOWER	MINUTES SLOWER	MINUTES SLOWER

Explore Corel's Growing Macintosh® Family



Powerful Word Processing



- Corel® WordPerfect® 3.5 for Macintosh®**
- Corel® WordPerfect® 3.5 - Powerful word processing that improves productivity
 - Netscape Navigator™ - Internet browser
 - Integrated Internet tools - Create, import and export HTML documents
 - Smart Functions - Make It Fit™ and Quick Correct™
 - MasterJuggler® - Font management
- Plus!** 84 automated templates, 5,400 clipart images, 150 fonts, 200 photos

\$79^{98*}

Competitive upgrade CD-ROM version

\$159^{98*}

Full CD-ROM version

World-Class Professional Graphics



CorelDRAW™ 6 Suite for Power Macintosh®

- CorelDRAW™ 6 - Illustration and page layout
- Corel® WordPerfect® 3.5 - Efficient word processing
- CorelDREAM 3D 6 - 3D modeling and rendering
- Corel ARTISAN™ - Photo editing and image creation
- Corel TEXTURE™ 6 - Bitmap texture creation

\$148^{98*}

Competitive upgrade CD-ROM version

\$388^{98*}

Full CD-ROM version

All-In-One Graphics Powerhouse!



Corel Print House™

- Create great-looking graphics for your home or office in minutes
- Step-by-step Wizards guide you through any project
- Fun drawing and special effects tools help you jazz up your projects
- Over 5,000 editable clipart images
- Over 1,000 ready-to-print samples

\$29^{98*}

Full CD-ROM version

Ideal for greeting cards, banners, invitations, letterhead, certificates, labels and much more!

Dazzling Art Images on CD-ROM



Corel MEGA GALLERY™

- Over 50,000 vector clipart images
- 60,000 Internet-ready, low-resolution photos
- Over 1,000 fonts
- Full-color clipart manual
- Visual Multimedia File Manager

\$64^{98*}

Full CD-ROM version

Corel® WEB.GALLERY High-Quality Internet Clipart



\$62^{98*}

Full CD-ROM version

Over 7,500 Internet-ready clipart images

Corel GALLERY™ 2 for Macintosh® High-Quality Clipart on CD-ROM



\$38^{98*}

Full CD-ROM version

15,000 clipart images

Corel® Professional Photos on CD-ROM Photographic Excellence on CD-ROM



\$18^{98*}

each Full CD-ROM version

High resolution and royalty free
Also available: Corel® Stock Photo Libraries (20,000 images in each library) and Corel® Super Ten Packs (1,000 images in each pack)



1-800-248-0800

Please refer to source code C038

*US\$ plus applicable taxes and shipping.

KUR-0390-US



Official Worldwide Sponsor of Bobsleigh



Corel, Official World Title Sponsor of the COREL WTA TOUR



www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080

CIRCLE 77 ON READER SERVICE CARD

Corel, CorelDRAW, WordPerfect, Print House, Corel MEGA GALLERY and Corel GALLERY are either trademarks or registered trademarks of Corel Corporation or Corel Corporation Limited. Macintosh and Power Macintosh are registered trademarks of Apple Computer, Inc. All other product and company names are trademarks or registered trademarks of their respective companies.

SyQuest SyJet



As fast as a Jaz — with higher cartridge capacity.



THE SYJET HAS LANDED at last, more than a year after it was announced as SyQuest Technology's response to Iomega's Jaz removable-cartridge drive. The SyJet and the Jaz (and their respective cartridges) are comparably priced, and the rival drives' speed characteristics are remarkably similar. The 1.4-GB SyJet cartridges come out on top in terms of raw capacity compared with the 1-GB Jaz ones. Still, the SyJet has a few rough edges, and it is unlikely to displace the Jaz at service bureaus and in multimedia studios. Whether the SyJet is right for you may depend mostly on how much you plan on sharing data with others.

Casing the Situation

Like the Jaz, the SyJet uses 3.5-inch cartridges based on Winchester-style hard-disk technology. (SyJet and Jaz cartridges are not interchangeable, however.) We liked the external-SCSI SyJet's sleek, attractive case, which is slightly smaller and lighter than the Jaz enclosure. The front door on the SyJet case is something of a mixed blessing, however: It's a bit of a nuisance when you're swapping cartridges in and out of the drive, but when there's no cartridge in place, it clearly offers better protection of the internal drive hardware than the flimsy door on the Jaz drive.

We had a similarly mixed impression of other SyJet design features. On the upside, the SyJet's left-side on/off switch is handy and much easier to locate than the Jaz's back-panel switch. (It becomes an equally handy top switch if you use the SyJet in its vertical orientation.) We also liked the SyJet's power and activity LEDs and the auto-eject button, all located on the front panel. We were somewhat disconcerted, however, at needing to press down on each SyJet cartridge in order to seat it properly after inserting it in the drive; we know this wasn't a defect, because the manual explains the procedure, but it felt wrong to us to *have* to poke our fingers inside the drive.

Speed Trials

The SyJet's data-transfer speed, as measured with our industry-standard MacBench 4.0

benchmarking software, proved extremely close to that of the Jaz. As reflected in the accompanying charts, the SyJet was almost 6 percent slower than the Jaz on the Disk test, which mimics the data-transfer characteristics of general business applications such as Microsoft Word and Excel. On the Publishing Disk test, which emulates large-file data transfers such as those used by Adobe Photoshop and QuarkXPress, the SyJet beat the Jaz by 3 percent.

We were surprised to see the SyJet's Publishing Disk score so close to the Jaz's score,



SyQuest's new SyJet 3.5-inch-cartridge drive offers a formatted capacity of 1.4 GB per cartridge; it can be used in either a horizontal or vertical orientation, and in its default configuration, its speed closely matches that of the Iomega Jaz drive.

because in our First Look at the SyJet (March '97, page 36), the SyJet scored about 50 percent higher than the Jaz on the Publishing Disk test. The reason: The preshipping SyJet we tested for the First Look was supplied with write verification off, but shipping SyJets default to write verification on, as do shipping Jaz drives. Write verification is a security measure that double-checks data that has been

SyJet went into production: The company told us to expect even higher speed than we saw in our First Look, because the 256K hardware cache in our preshipping SyJet would be replaced with a 512K cache in the shipping models. The shipping version we received still had a 256K cache.

The Bottom Line

The SyQuest SyJet and its similarly priced rival, the Iomega Jaz, offer comparable speed, adequate for audio and video playback and for storing multimedia or application software. If you're looking for a removable-storage system that's common currency at service bureaus, recording studios, and the like, the Jaz's one-year head start gives it the advantage. But if your main concern is storing heaps of data and you're willing to wait for SyQuest to fix its flaky software, the SyJet's 40-percent cartridge-capacity advantage over the similarly priced Jaz gives the SyJet a decided edge.

/ Jim Shatz-Akin

SyQuest SyJet, \$499; cartridge, \$99 (list). **Company:** SyQuest Technology, Fremont, CA; 800-245-2278 or 510-226-4000; <http://www.syquest.com/>. **Reader Service:** Circle #405.



SYJET TAKES ON JAZ

We used our industry-standard MacBench 4.0 to see how SyQuest's new SyJet drive stacks up against its more established rival, the Iomega Jaz drive. The MacBench 4.0 Disk test measures the speed of data transfers common to business applications such as Microsoft Word and Excel; the Publishing Disk test clocks larger-size transfers such as those used by Adobe Photoshop. MacBench 4.0 scores are relative to those of an Apple Power Mac 6100/60 with a 250-MB hard drive. This system is assigned a score of 100 on all tests. Both drives were tested with write verification on, the default setting.

MACBENCH 4.0 SCORES





**THIS 3.3 FT.
CABLE AND LENS
ARE ATTACHED TO
THE DIGITAL CAMERA
THAT GIVES MACS
A WHOLE NEW FACE!**

*Only from the mind
of Minolta*



Only the Dimage V
has all of these features:
MOVEnZOOM™ Lens
with 3.3 ft. cable.
2.7x zoom range.
640x480 resolution.
1.8" color LCD finder/monitor.
Macro focus.
Compact, portable size.
Built-in flash.
Adobe Photo Deluxe™ software.
Unlimited image capacity on
removable SmartMedia™.
Everything you need for
PC or Macintosh™ computers.

Minolta Presents
Dimage V
THE FIRST AFFORDABLE DIGITAL CAMERA
WITH THE REMARKABLE, MOVEnZOOM™ ROTATING/DETACHABLE LENS.

*"But to see
the complete
versatility
and unlimited capabilities
of this amazing
digital camera*



*you'll just have to go
to your
Minolta dealer."*

For more Dimage V information contact:
GO MINOLTA on CompuServe
1-800-528-4767 Toll Free Photofax
fax-back number 24 hours/7 days
www.minoltausa.com

CIRCLE 129 ON READER SERVICE CARD

©1997 MINOLTA CORPORATION

Express Yourself!

*Stephen Petronio, Artistic
Director, Stephen Petronio
Dance Company, New York,
uses a SuperMac C600.*



You'd be amazed what people are using SuperMac C600 computers for these days.
Sure – they're still great for graphics, spreadsheets, word processing and web surfing... but some users have pushed the envelope and applied our cutting-edge technology to expressions you might not expect.



UMAX[®]

Computer Corporation

600 KEY FEATURES

- Fast, Powerful Mac OS
- Expandable & Upgradeable
- Easy-to-use • Affordable

2 C600 BUNDLED SOFTWARE

- ▶ CLARIS Claris Works[™]
- ▶ Intuit Quicken[™] SE
- ▶ Adobe Pagemill[™]
- ▶ EarthLink Network[™] Total Access[™]
- ▶ Conflict Catcher 3.0[™]
- ▶ NOW Utilities
- ▶ NOW Up-to-Date & Contact
- ▶ Cypress Research Megaphone
- ▶ Power FPU
- ▶ MINDSCAPE[™] Grolier Encyclopedia
- ▶ MICROMAT TechTool[™] Pro
- ▶ NowWhat Software 3D Talking Globe
- ▶ NowWhat Software The Cities Below[™]
- ▶ FWB CD-ROM & HD Tool Kit[™] PE

High-Upgradeability



SuperMac J700



SuperMac C600



SuperMac S900



CALL 888-236-UMAX or visit us @ <http://www.supermac.com>

PowerPC[™]

© 1997 All rights reserved. SuperMac is a registered trademark licensed to UMAX Computer Corporation. ▶ 47470 Seabridge Dr. Fremont CA 94538. Tel: (800) 232-8629. Fax: (510) 623-7350
Mac and the Mac OS logo are trademarks of Apple Computer, Inc., used under license. PowerPC and the PowerPC logo are registered trademarks of International Business Machines Corporation. Limited time offer. While supplies last. Monitor not included

Whistle InterJet 100



Turnkey server makes Web access, e-mail simple for small offices.

INTERNET SERVICE PROVIDERS already know the value of integration: Distributing a single CD-ROM full of the software you need for connecting to and using the Internet is the most efficient way of serving new ISP customers. Whistle Communications has taken a page from the ISP business plan with the InterJet 100, which offers a one-stop option for small businesses that need Internet access and prefer to maintain their own servers.

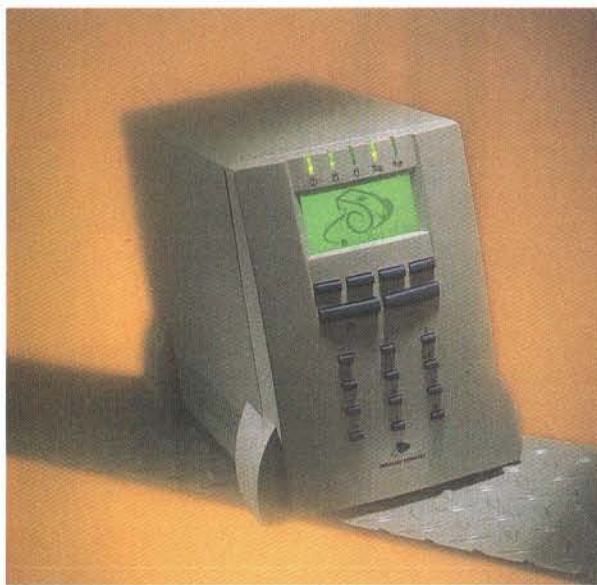
The toaster-sized InterJet contains everything necessary for connecting a small office to the Internet: The InterJet is actually a BSD-UNIX computer and an IP/AppleTalk router. The built-in server software manages e-mail and an intranet Web site, a four-port Ethernet hub connects the InterJet to your office network, and an included 33.6-kbps modem (ISDN and frame-relay options are also available) provides a dial-up connection to your ISP. You manage the whole setup from a Web browser via the friendly interface of the built-in management software, which lets you create user accounts, maintain mailing lists, and monitor the InterJet's status. Unlike LAN-router vendors that supply Internet connectivity for small businesses but provide no easy way to manage that access and no server for holding data, Whistle offers customers local control of e-mail and Web publishing.

Getting the InterJet up and running is easy: Plug it in, enter an ID and phone number on the InterJet keypad, and connect to the Internet via a Web browser. Whistle provides TCP/IP client software for the Mac OS, Windows

3.1, and Windows 95 as well as a copy of Netscape Navigator and Eudora Lite for each of the operating systems. Mac users in your office can connect to the InterJet via AppleTalk in order to download client software or add HTML pages to your company's public or private Web site.

The InterJet's built-in DHCP (Dynamic Host Configuration Protocol) server software allocates an IP address to each computer on your network, allowing everyone to surf the Web, read e-mail, and use other Internet services. The administrator can set the InterJet to contact your ISP when a user requests a connection, to connect at specified intervals, or to remain connected continuously. Since the InterJet contains POP/SMTP (e-mail) and HTTP (Web) server software of its own, it need not be connected to the ISP's network in order to deliver mail or Web pages to users on your network. That's a considerable advantage for ISDN users, who often pay by the minute.

Another advantage of the InterJet is its



The compact InterJet, from Whistle Communications, provides painless Internet access for everyone in your office.

HTML-based software interface. Designed for administrators who don't take care of a network full-time, the software uses fill-in boxes, radio buttons, and hyperlinks to walk you through the process of setting up mail, Web publishing, and security for users. Some people may find the six InterJet characters, or agents, a bit too cute, but the interface is very accessible.

Unlike accessing the Internet through an ISP, using the InterJet allows businesses to retain control of their own user accounts. When

you buy an InterJet and a master account with an ISP, you receive a range of IP addresses for your network, rather than a set of pre-configured user accounts. You can create your own accounts via the InterJet, and change them at will, without having to rely on an ISP's support staff.

Although the InterJet is ideal for some small businesses, it has limitations for those that need maximum flexibility: You can purchase it only from selected ISPs (Netcom and PSINet are early Whistle partners), and you can't run CGI applications with the built-in Web server software. For that, you'll need access to an ISP's server as well as to the InterJet. You'll also need access to your ISP's Web server if you exceed the 1.2-GB capacity of the InterJet's hard drive. We'd like to see support for an external SCSI drive or an option for a secondary internal one.

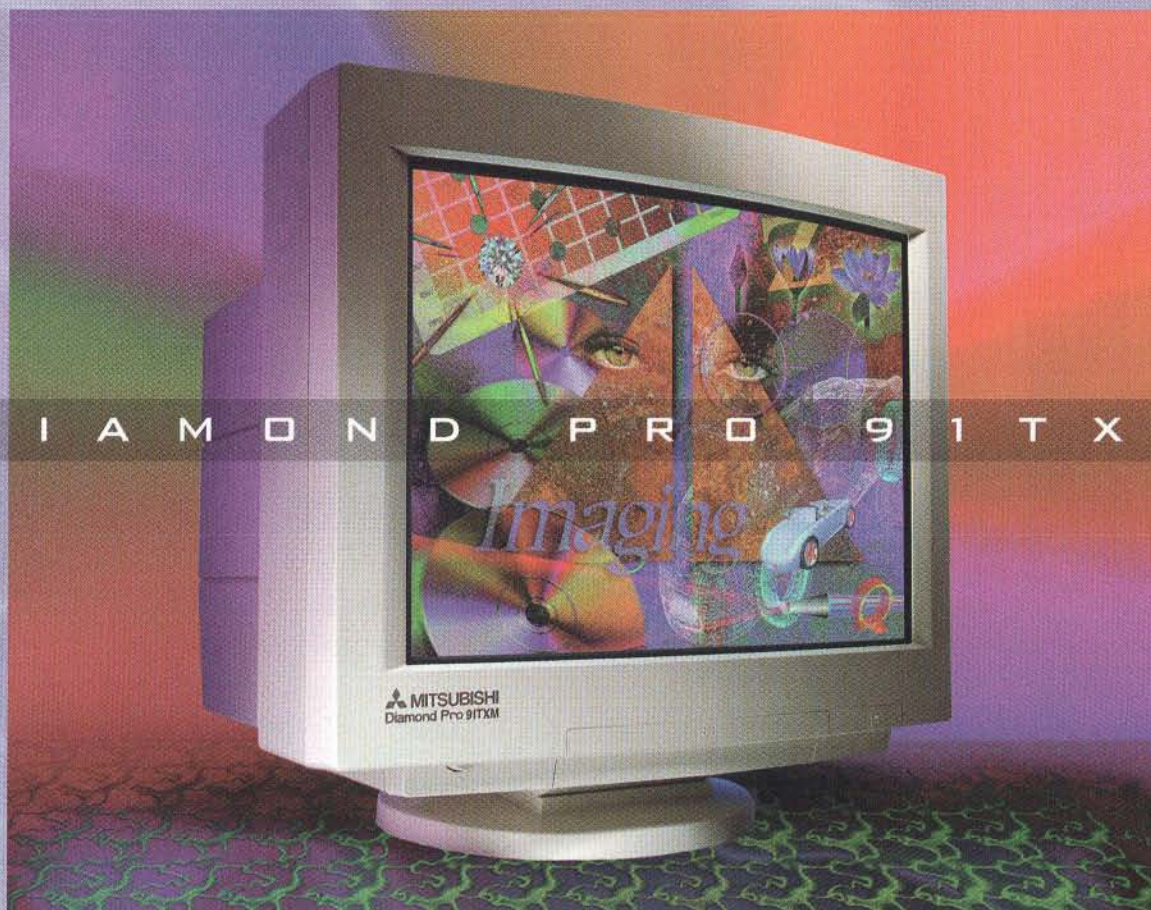
We also found a few minor irritants within the InterJet's Mac-client-software installer: If you use the installer to configure Open Transport TCP/IP for use with the InterJet, the software, unlike comparable programs from other vendors, will erase all previous TCP/IP configurations on your system. Second, we were disappointed to find that the installer modified existing Netscape Navigator preferences (background color, window appearance, and so on) with no warning. The installer also lacks a Custom option, which would be useful for those who prefer to configure software manually.

The Bottom Line

If you'd like a Web server and access to Internet mail for your small business but don't want to change your job description to server administrator, getting an InterJet 100 is an essentially painless way to go — even if your office uses Windows machines as well as Macs. As you might expect from a one-size-fits-all product, the InterJet has a few limitations — notably the inability to support CGI applications without special collaboration with your ISP and slightly annoying handling of Mac TCP/IP configurations. Furthermore, the InterJet is currently available from only a handful of ISPs, which limits your range of choices more than we'd like. But if the InterJet wins the popularity it deserves, that situation will probably improve rapidly. / Shelly Brisbin

Whistle InterJet 100, \$1,995 (list). **Company:** Whistle Communications, Foster City, CA; 888-494-4785 or 415-577-7000; <http://www.whistle.com/>. **Reader Service:** Circle #407.

D I A M O N D P R O 9 1 T X M



The DIAMONDTRON advantage is now even bigger, sharper and clearer.

Introducing the world's first .28mm, 21-inch (19.7" DVI*) aperture grille monitor.

The new Diamond Pro 91TXM (21" CRT/19.7" diagonal viewable image) from Mitsubishi Electronics represents an unprecedented improvement in the way you'll look at monitors from this moment on.



Bright, vivid colors with superb contrast. Razor-sharp focus due to Mitsubishi's enhanced electron gun. High refresh rate for flicker-free imagery. On-Screen Display system with intuitive front-panel controls. All in an ergonomic, compact enclosure that fits easily into any workspace.

Best of all, the Diamond Pro 91TXM is available at the estimated selling price of \$1,649, including a comprehensive 3-year warranty and support program to keep it working at peak efficiency. The new Diamond Pro 87TXM (17" CRT/16.0" diagonal viewable image) is also available, with an estimated selling price of \$829.

Get all the details today—both on-screen and off—by calling Mitsubishi Electronics at **1-800-843-2515** in the U.S. and Mexico. In Canada call **1-800-387-9630**. For immediate product specifications call Mitsubishi Qwikfax at **1-800-937-2094**. World Wide Web <http://www.mitsubishi-display.com>



©1997 Mitsubishi Electronics America, Inc. DIAMONDTRON is a trademark of Mitsubishi Electronics America, Inc. Microsoft, Windows and the Windows logo are registered trademarks of Microsoft corporation. Mac and the Mac OS logo are trademarks of Apple Computer, Inc. * DVI: Diagonal viewable image

CIRCLE 86 ON READER SERVICE CARD

Adobe Type Manager Deluxe 4.0



New font-management tools make ATM Deluxe a winner.

TAKING ATM FOR GRANTED has been fairly easy in recent years: Despite continual improvements in its ability to render Type 1 fonts on-screen and on non-PostScript printers and even with the major advance of support for multiple-master fonts, Adobe Type Manager has remained an unassuming background player. You tend to notice it only if it's disabled and your typefaces suddenly turn hideous. No more. Despite a few rough edges, new type-management features in ATM Deluxe 4.0 mark the utility as a tool publishing pros will use — and appreciate — every day.

Enhancing font appearance on-screen and in non-PostScript output is still a major part of ATM's job description. In fact, ATM Deluxe extends this capability to include TrueType as well as Adobe-standard Type 1 fonts. But the combination of these functions with font-management features like those of Symantec's Suitcase and Alsoff's MasterJuggler make ATM a powerful all-in-one font tool.

ATM lets you remove your fonts (Type 1, TrueType, or bitmaps) from the System Folder's Fonts folder and store them on any hard disk. You can then use ATM to activate suitcases or sets (groups of fonts to be used together) as needed. Fonts load into system memory only when they're activated, so if

you've got a large font collection, you can reduce an application's RAM requirements significantly by activating only those fonts you need for a particular project.

ATM font management centers on a Known Fonts list that ATM compiles automatically as you install the program, searching all mounted volumes for fonts. You create and edit font sets from within a two-pane window: You create and name sets in the left pane and then drag fonts or suitcases into them from the right pane, which contains the scrollable Known Fonts list. Although you can include the same suitcase in more than one set, you must add it to each set individually — ATM cannot copy from one set to another, as Suitcase does.

You can activate or deactivate custom font sets at any time and can also set them to launch with individual documents or applications. In addition, whenever you launch a document, ATM Deluxe's nifty autoactivation feature automatically loads all the fonts that were used to create the file.

Overzealous Testing

Less successful than the font-set management are ATM Deluxe's two methods of checking font integrity: The first is an automatic examination of fonts during construction of the Known Fonts list; the second is a manual check you can perform on individual fonts you suspect are damaged. ATM banishes fonts that fail either test — and we found that the program sometimes rejected fully functional, intact fonts along with damaged ones.

Unjustly rejected fonts included some non-Adobe multiple-master fonts, some faces from the FontFonts collection that transform characters as they are set, and some otherwise trouble-free Monotype fonts. To work around

the problem, we installed fonts that were rejected in the automatic scan in the System suitcase. For fonts wrongly rejected during manual checks, we trashed the spurned suitcases, reinstalled them, and made a note not to let ATM Deluxe check them again.

More welcome in ATM Deluxe is a well-designed, customizable font-preview feature. Previews, which you can print for handy reference, are preset to show the base character set, a paragraph of text, and one-line examples of characters at sizes from 12 to 48 points.

Other improvements include font anti-aliasing, which works only on Type 1 fonts. This further relieves the jaggedness inherent at low monitor resolutions, but by softening characters' edges, it creates a slight fuzziness that may bother some users.

A new precision character-positioning option nudges on-screen characters in order to reduce collisions and/or ugly gaps. The effect is subtle but yields noticeable improvements with many fonts.

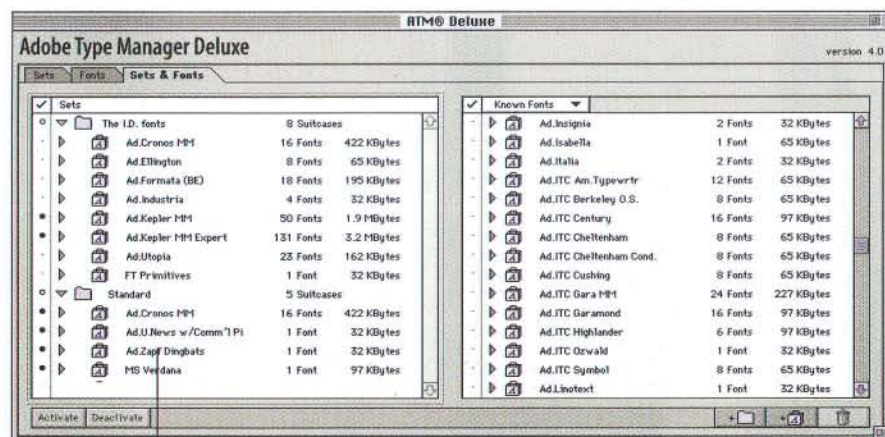
The font-substitution option, previously part of the now discontinued SuperATM, uses special multiple-master fonts to simulate fonts that are missing from a given document. It works only for fonts listed in the ATM Font database (which ATM Deluxe places in your System Folder) and can't help with dingbats, scripts, or other display type, but it generally offers greater legibility than you'd get by substituting Times, Helvetica, or Courier.

ATM Deluxe includes 30 Adobe fonts and requires roughly 3 MB of disk space. Its RAM requirements vary, depending on whether you turn on font substitution or have a lot of fonts active (Adobe recommends 50K per open font in ATM's RAM cache). All told, the program is likely to need 3 megs of RAM on a Power Mac.

The Bottom Line

ATM Deluxe's indispensable font-rendering features are better than ever, and the program's new type-management features are very good, especially when you consider that they're really version 1.0, not version 4.0. Despite our problems with ATM Deluxe's over-eager font-verification functions, the utility's full features and graceful interface present a formidable challenge to stalwarts Suitcase and MasterJuggler. / Kathleen Tinkel

Adobe Type Manager Deluxe 4.0, \$99.95; intro pricing: \$49.95; bundled with Adobe Type Reunion Deluxe 2.0, \$69.95 (list). **Company:** Adobe Systems, San Jose, CA; 800-445-8787 or 408-536-6000; <http://www.adobe.com/>. **Reader Service:** Circle #408.



Creating custom font sets with Adobe Type Manager Deluxe 4.0 is as simple as dragging fonts from the Known Fonts list (right) into set folders.

Adobe Type Reunion Deluxe 2.0



An indispensable type tool adds welcome new features

GRAPHICS AND PUBLISHING PROS have a love/hate relationship with Adobe Type Reunion. The utility is revered for its ability to reduce clutter by generating hierarchical font-family lists on the Font menu and cursed for its penchant for clashing with other system extensions.

Adobe Type Reunion 2.0, the first real upgrade to the program since its initial release, in 1990, brings welcome stability and offers several meaningful improvements.

For starters, you can elect to have ATR display fonts in their own typeface (and disable this function for dingbats and other symbol fonts). Another broadly useful feature is ATR's new ability to move most-used fonts to the top of its hierarchical menu. (You can specify the maximum number to include.)

ATR's most interesting new function is that it lets you rename fonts — a great boon for working with multiple-master fonts and their unwieldy numerical designations.

The ability to turn off ATR for specified applications, either because they may conflict or because you don't need ATR with them (in the case of telecommunications software, for example), is also very useful. On a less useful note, ATR now lets you view fonts in custom groupings, rather than by family, which gives you more control over your Font menus. (Although handy, this function is somewhat redundant if you are also running ATM Deluxe 4.0, which allows you to load only desired font groups within a given document.)

The Bottom Line

ATR Deluxe 2.0 represents a solid improvement over its predecessor. Many of the incompatibilities that once marked the utility seem to be gone, and its new functions make it generally more useful to those who work with many fonts. / Kathleen Tinkel

Adobe Type Reunion Deluxe 2.0, \$60; introductory pricing, \$29.95; bundled with ATM Deluxe 4.0, \$69.95 (list). **Company:** Adobe Systems, San Jose, CA; 800-445-8787 or 408-536-6000; <http://www.adobe.com/>. **Reader Service:** Circle #409.

"Wow, what a scanner!"



Linotype-Hell



LinoColor
Color is child's play.

©1997 Linotype-Hell, Hell and Linotype are registered trademarks, and LinoColor, VisuaLab and VisuaLab EZ are trademarks of Linotype-Hell AG and/or its subsidiaries. Macintosh is a registered trademark of Apple Computer, Inc. Windows 95 is a registered trademark of Microsoft Corp.

For Macintosh® or Windows 95®

That's what *MacUser* said when they gave the LinoColor™ JADE a BEST BUY rating. That's what *Computer Reseller News* said when they tested LinoColor scanners

with VisuaLab™ software. And the VisuaLab EZ™ software that

comes with the JADE is so simple that you'll say "Wow!" too, when you see how easy it is to get great scans for your documents or web sites. And it's less

than \$900. Wow!

For more info, or the dealer nearest you:

888-LINOCOLOR.

Or get it on the Web at www.linocolor.com

CIRCLE 11 ON READER SERVICE CARD

MacUser

COMING SOON

AUGUST '97

<http://www.zdnet.com/macuser/>

MACUSER'S 101 TOP TIPS

In the August issue of *MacUser*, editor Rik Myslewski offers 101 productivity tips (application and OS-based) that will benefit Mac newcomers and power users alike. Organized according to task, these tips are sure to save you time and money. Turn to *MacUser* when you want complete coverage.

RAID 0 SYSTEMS

If you do desktop video, graphics or photo imaging, and are interested in affordable, high-capacity storage, you'll want to read the August issue of *MacUser*. Using MacBench 4.0, Kristina DeNike, the storage queen at MacUser Labs, tests and mouse-rates RAID 0 systems evaluating their speed and usability.

LABS REPORT: 21-INCH COLOR MONITORS

To a desktop publisher or graphics professional, size and image quality are two important factors in a monitor. In the August issue, *MacUser Labs* tests twelve higher-end 21-inch monitors and recommends the best in terms of image quality.

AUGUST AD CLOSE:

MONDAY, MAY 19 1997

Nikon CoolPix 100



PC Card digital camera minimizes hassle — and image quality.

IF YOU HAVE A POWERBOOK with PC Card slots and you've been looking for a consumer-quality digital camera, you can consider the Nikon CoolPix 100. It's a digital camera mated to a PC Card that plugs right into your PowerBook's PC Card slot for quick downloading of JPEG images without cables or extra software. Its captured images aren't spectacular — especially for a \$500 camera — but they're fine for use on the World Wide Web or just for fun.

Card-Carrying Camera

The CoolPix 100 camera is attached to one end of a PC Card. When you're using the camera to take pictures, the card plugs into a battery compartment, about the size of a cell phone, that holds four AA alkaline batteries for powering the camera and its built-in automatic flash.

When it's time to download images from

the camera, you plug the PC Card into your PowerBook. The CoolPix's PC Card acts as if it were any DOS-formatted 1-MB flash-RAM card. Provided you have PC Exchange installed, the volume containing your pictures mounts on the Mac desktop and you can simply drag stored JPEG images onto your hard disk, where you can use the bundled Storm EasyPhoto application to do basic image re-touching or archiving.

Camera features include timer, flash, red-eye reduction, time- and date-stamping, and a macro setting for close-up shots. An LCD



The Nikon CoolPix 100 digital camera connects to a PowerBook's PC Card slot, enabling a volume that contains your pictures to mount on the desktop.

tracks battery life and the number of images stored in the camera. You use this display to select flash mode, to set the auto timer, and to select either 10:1 or 20:1 JPEG compression. Images at either compression setting are 512 x 480 pixels. The CoolPix can store 21 images at 10:1 compression or 42 at 20:1.

Pictures we took with the CoolPix often lacked detail and exhibited artifacts — stray marks generated by the compression process.

The PC Card part of the CoolPix is a Type II card, and in theory it should be able to fit alongside another Type II PC Card. In practice, however, the camera's position may make attaching cables to a second PC Card tricky.

The Bottom Line

The CoolPix is aimed at a narrow audience — owners of PC Card-supporting PowerBooks. The camera is very small; extremely easy to use; and because of its lack of cables and downloading software, convenient. However, it produces only mediocre image quality and is as expensive as superior cameras from other vendors. / Jeff Pittelkau

Nikon CoolPix 100, \$500 (list). **Company:** Nikon, Melville, NY; 800-526-4566 or 516-547-4200; <http://www.nikonusa.com/>. **Reader Service:** Circle #411.

OmniForm 2.0



Make paper forms interactive — but then what?

OMNIFORM, FROM CAERE, is designed to help you and your company replace paper with pixels: It can be used to design printed business forms, but its main focus is on replacing them with interactive digital forms — and it does a good job of it. Unfortunately, however, the program doesn't allow you to do much with those forms — or the data they contain once they're filled out.

The \$199 application lets you create digital forms from scratch, using standard drawing and text-formatting tools. Its real forte, however, is digitizing existing paper forms you've scanned or received via fax modem. Using the scanned document as a template, OmniForm automatically converts empty spaces into fillable fields. You can then employ OmniForm to customize the fields' appearance and behavior: add pop-up lists, tables, and check boxes; set minimum and maximum values for

acceptable entries; and make some fields mandatory for completing the form. The graphical Calculation Builder lets you define formulas that automatically fill some fields based on data entered in others.

OmniForm saves data to a built-in database, which you can flip through or search; if you want to create reports, you'll have to export the data to another program. Unfortunately, there is no way to export the forms themselves for use in other programs, such as database applications, or to convert an OmniForm table to HTML for use on the Web.

When your design is complete, you can print it or — more logically — distribute it electronically within your company. A fill-only version called OmniForm Filler (\$99, or less in multiuser packs) is due soon.

Caere labels the new program Version 2.0, to match its Windows sibling, but this is actually the first release for the Mac. We found several rough edges: Online help would not launch on our system; fillable fields were highlighted in a garish yellow, which there was no way to change; text entered in table cells touched the cell borders, unless we typed in offset values. And in general, the program made us deal with far too many dialog boxes.

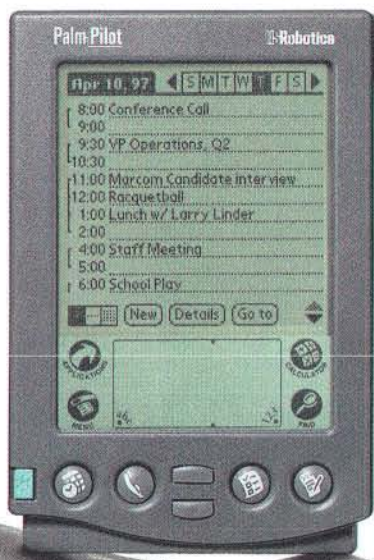
OmniForm is the first challenger in years to the leading Macintosh-based (but also cross-platform) forms software, Shana's Informed Designer and Informed Filler. Informed Designer costs more than OmniForm — \$295 — and it has no built-in scanning support, so the Caere package is a better bet for working with existing paper forms. But the Shana products are more mature, and they offer a variety of options that OmniForm does not, including automatic database lookups; built-in Internet support; and workflow features such as routing lists, tracking, and digital signatures.

The Bottom Line

OmniForm does what it advertises — enables you to scan paper forms and quickly convert them to electronic ones — but it could use more polish, including HTML support and integration with database applications. If your organization is serious about digitizing not just forms but also information flow, more-mature (if more-expensive) programs from Shana might be a better bet. / Henry Norr

OmniForm 2.0, \$199 (estimated street). **Company:** Caere, Los Gatos, CA; 800-535-7226 or 408-395-7000; <http://www.caere.com/>. **Reader Service:** Circle #412.

TRAVEL



light

and stay in touch
with your PC anywhere.

To run your life, you need information. Appointments, contacts, e-mail. And it's probably locked tight on your PC back in some office. The new PalmPilot™ connected organizer changes all that. It lets you enter, update, and access information. And HotSync™ technology lets you synchronize that data with your PC at the touch of a button. Whatever your most important information, PalmPilot delivers it. Anywhere. Anytime.

Optional links are available to Schedule+, Lotus Organizer, Symantec ACT!, Ascend 97, and others (sold separately).

Call 1-800-881-7256 ext. 21 or visit our web site at
<http://www.usr.com/palm> for the PalmPilot retailer nearest you.

PalmPilot™

PalmPilot Personal \$299*

- Backlit display for low-light viewing
- Instantly syncs data with your PC
- Easy expense tracking
- Stores thousands of entries
- User upgradeable to Professional Edition



PalmPilot Professional \$399*

All PalmPilot Personal features plus:

- Pocket e-mail
- Internet ready (TCP/IP support)
- Twice the memory

* The average U.S. street price for PalmPilot Personal Edition is \$299. The average U.S. street price for PalmPilot Professional Edition is \$399. PalmPilot MacPac, required for Macintosh connectivity, is sold separately. Some features may not be supported on Macintosh. © 1997 U.S. Robotics. All rights reserved. U.S. Robotics and the U.S. Robotics logo are registered trademarks, and HotSync, PalmPilot, and the PalmPilot logo are trademarks of U.S. Robotics and its subsidiaries. All other brands and product names are trademarks or registered trademarks of their respective holders.

Extreme 3D 2



Low-cost 3-D package gets high-end features in upgrade.

WE ADMIT TO HAVING BEEN skeptical about whether Extreme 3D 2 warranted a full-version-number upgrade. The upgrade's arrival just ten months after the product's debut made us wonder if the increment was just marketing hype. But the latest version of Macromedia's PowerPC-only 3-D-modeling, -rendering, and -animation package lives up to its billing, with an enhanced interface; Web-graphics support; faster rendering; and powerful new tools, including a particle-systems generator and metaballs. Together, these enhancements make Extreme 3D the strongest of all the low- to midrange Mac 3-D-design products.

New Tools

For the most part, Extreme 3D 2 looks the same as its predecessor. Users of version 1 will feel right at home with version 2 but will find small — but welcome — interface improvements throughout the program. The materials palette, for example, now provides larger previews and displays transparency controls.

Despite these interface improvements, we wish Macromedia had gone a little further in simplifying Extreme 3D's tool set. Although the context-sensitive prompts help guide you through the multistep modeling processes, many tools still feel somewhat nonintuitive; we often found ourselves tunneling through dialog boxes and menus, looking for tool settings. We also wish the Score window, which provides powerful keyframe-animation controls, had been given a face-lift. Essentially unchanged from version 1, it seems clunky and nonintuitive.

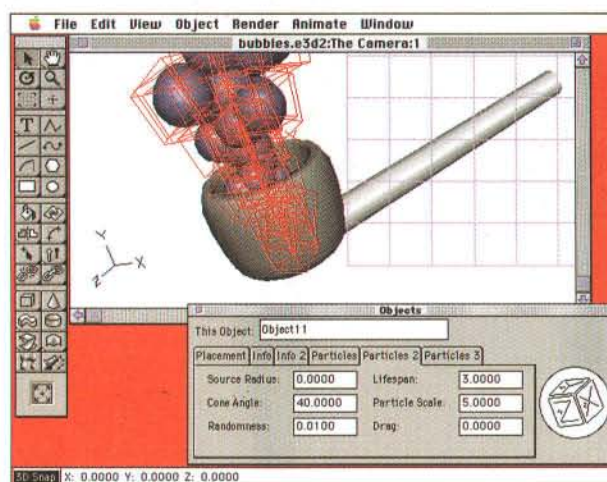
Cool Tools

Grousing aside, Extreme 3D 2's best new features — the Particle and Metaform tools — are fantastic enhancements. Similar to the metaballs feature of more-expensive 3-D programs, such as Strata StudioPro, Metaform allows you to create organic-looking, blobby objects that flow together like globs of liquid mercury. It can create blobs from any 2-D profile, so your metaballs don't have to be spherical, as they must in Strata StudioPro. After a

little trial and error, you'll find that the "blobbiness" and radius adjustments offer good control of metaball appearance and behavior.

The Particle tool lets you create jets and fountains of streaming particles, including smoke and fire. Separate adjustments for velocity, drag, gravity, and life span give you a good degree of control over particle behavior. Even better, any object can be designated a particle, so you can create, for example, spouts of stars or bubbles — or kittens.

The Particle tool is powerful, but its fire and smoke effects are not quite believable and take a long time to render. You can improve your results by building custom texture maps, but for serious pyrotechnic endeavors, you're bet-



New in Extreme 3D 2, the Particle tool includes a well-rounded assortment of options for controlling particle behavior.

ter off using a postprocessing filter such as MetaTools' Final Effects.

Web Tools

Macromedia has taken some pains to make Extreme 3D a first-rate tool for creating 3-D graphics for the World Wide Web. The program now renders animations in the GIF89a (animated GIF) and Progressive JPEG formats, and it offers direct support for VRML 1 and 2. Extreme 3D 2 allows you to attach three types of URLs to an object: Anchor (which links to a Web page), Inline (which links to other pieces of 3-D geometry), and Texture Map (which links to texture-map images).

In addition to rendering directly to VRML format, Extreme 3D provides powerful controls for setting an object's resolution. Particularly useful is the new Adaptive Smoothing control, which lets you lower a model's polygon count, to minimize the size and download times of VRML scenes.

Shading and Rendering

Extreme 3D uses procedural shaders for rendering, and like all other procedural-shading mechanisms, they frequently make things look a little *too* perfect. The included Mondo Map shader provides some relief, allowing you to adjust such properties as bump, specular, and environment, and — for the first time — transparency and luminosity. By tweaking these controls, you can make shaders such as Chrome and Marble much more realistic.

Although Extreme 3D lacks a ray tracer (the program provides only Phong shading for rendering), support for shadow transparency in version 2 lets you create soft-edged shadows that look very much like the results of a good ray tracer. Furthermore, the renderer

is now fully optimized for the PowerPC, which means shorter rendering times.

Besides these highlights, Extreme 3D 2 offers two useful, if less splashy, improvements: Xtras plug-in support allows third parties to develop new lighting and texture modules à la Photoshop plug-ins. Version 2 additionally provides full support for hardware QuickDraw 3D acceleration.

Like all other 3-D products, Extreme 3D is resource-hungry: The PowerPC-only version occupies about 40 MB of disk space. Although the program can run with as little as 24 MB of RAM, you'll want at least 32 MB for any serious projects.

The Bottom Line

Extreme 3D 2's assortment of powerful 3-D tools is designed for and well suited to Web and multimedia designers, and the program comes at a very reasonable price. (It's not a tool for film or video professionals, and it doesn't aspire to be.) Although we'd like to see Macromedia further simplify some of the tools, and print professionals might lament the lack of a ray tracer, Extreme 3D 2 is a most impressive upgrade. / Ben Long

Extreme 3D 2, \$399; bundled with FreeHand 7 Graphics Studio, \$469; bundled with Director Multimedia Studio, \$999 (list). **Company:** Macromedia, San Francisco, CA; 800-470-7211 or 415-252-2000; <http://www.macromedia.com/>. **Reader Service:** Circle #413.

Are you the kind of person who always wants everything your own way?

Cool!

EarthLink's Internet access now includes your Personal Start Page.

News Section:

Travel & Tourism

- Airlines Offer Travel Bargains Up to 75% Off: Consumers Can...
- Vanguard Airlines' Incredibly Low Everywhere-We-Go Sale
- Guest service soars with Vail and Beaver Creek revolutionary in-flight...
- Pennsylvania Governor Rides Announces Unique Regional Public/Private Partnerships to Impact...
- U.S. space-style ride for the public -- at \$10,000
- Sampling Japanese Theme Parks

Interactive Games & Entertainment

- Acclaim Entertainment's Space Jam Video/PC Game Makes a Fast Break...
- LIVE Entertainment Offers Walk-on Role in Motion Picture to Web...
- Tim Allen, Dana Carvey, Dennis Miller, Kevin Bacon, Carl Reiner...
- Digital maps of New England to make life easier for...

Music

- Online giant accused of copyright scoremongering
- Rolling Stones to tour U.S. British newspaper
- Windham Hill Composer/Pianist Jim Brickman to Release Third Album 'Picture'
- Bone Thugs-N-Harmony Keep Promise to Take Tie to the Top...
- Resina Resina Release Debut CD on Giant Records New Duo...

Stock Quotes Table:

Company Symbol	(MSFT)	(T)	(IBM)	(ATW)	(AAPL)	(NSCP)	(KNDU)	(COMP)
Last Sale	79 7/8	39 1/8	151 7/8	10 3/4	22 1/2	54 3/8	6337.16	1283.04
Net Change	+ 3 1/8	0	+ 3 1/4	- 1 3/8	- 1/8	- 1 5/8	+ 28.83	+ 16.72
Time of Last	16:01	17:01	16:29	16:00	16:01	16:01	14:04	13:44

Web Links Section:

- EarthLink:** EarthLink Home, Daily bLink, The Arena, The EarthLink Store, What's Hot, Technical Support
- Sports:** EarthLink Sports, ESPN, SportsLine USA, The Sports Network, The Sports Server
- Entertainment:** EarthLink's Hollywood, MovieLink 777FILM, Hollywood Online, Movie Reviews, The Internet Movie Database, The Ultimate TV List
- Finance:** EarthLink's Finance, Smart Money, CNN Finance Network, NASDAQ, Investor Dictionary
- My Favorites:** UNIX Reference Desk, News.com, Hotwired, CNN, Word, Shareware.com, USC

- 1 STYLIZE** Choose how your page looks and what goes on it.
- 2 GOT E-MAIL?** We'll tell you as soon as it comes in.
- 3 NEWS** Select from 25 categories you're interested in and we'll gather it for you from over 700 sources.
- 4 STOCK QUOTES** Watch your wallet fatten with your choice of stock quotes updated by PC Quote.
- 5 PREMIUM CONTENT** Enjoy discounted rates and direct links to services from Quote.com, CompuServe® and others.
- 6 WEATHER** Find out if you need shades or a scarf, with a 4-day local forecast.
- 7 WEB LINKS** Select personal links to your favorite Web sites so they're only one click away.
- 8 WEB SEARCH** If it's not on your Start Page, use a keyword to search the Internet to find exactly what you're looking for.

Unlimited Internet
\$19.95 a month

1 800-395-8425



It's your Internet™

Free software package for Windows™, Windows95™ and Macintosh®
www.earthlink.net Info e-mail: info@earthlink.net

All the goodies you expect... and more!

Personal Start Page Netscape Navigator™ Multiplayer Gaming Over 500 Dial-up numbers 24/7 Help 800# Free Website Chat ISDN Business Solutions National Frame Relay The Net "A"-Rated Pournelle's Choice Yahoo Best

©1997 EarthLink Network, Inc. Trademarks are property of their respective owners. All rights reserved.
EarthLink Network, Inc. 3100 New York Drive, Pasadena, CA 91107

CIRCLE 90 ON READER SERVICE CARD



1996

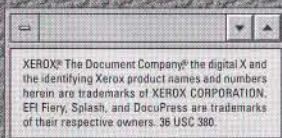
It's the 10th revision and it's a rush.

It's got to be perfect, but color output costs too much.

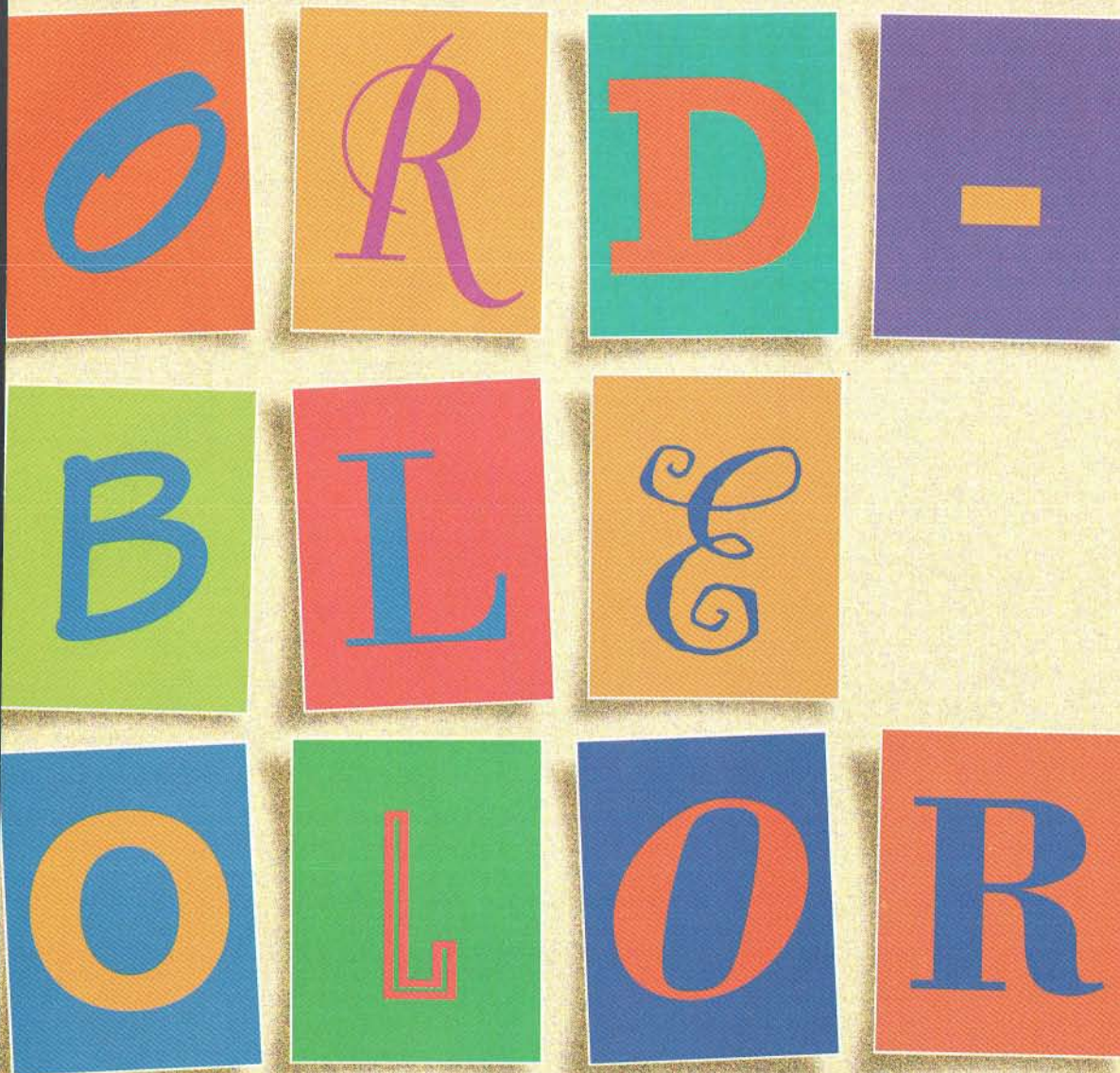
What you say about color printing can't be printed here.

1997

Introducing the Xerox DocuColor 5750. It adds new words to your vocabulary.



Your business depends on sharp, consistent color. But you depend on others to deliver it on-time and on-budget. Now there's a better way. The Xerox DocuColor 5750 Digital Color Copier/Printer. It delivers high-quality continuous-tone color at a productive 6 ppm for a very affordable price. In fact, you can get the DocuColor 5750 as a connected unit for what you would pay for a stand-alone color copier/printer. The



Xerox DocuColor 5750 handles transparencies, duplexing, 11x17 full bleed, and heavy (up to 110 lb) stock. There's also an ADF/Sorter and up to 4 trays to keep work flowing. It prints Pantone-licensed color and produces black text sharper. And no one offers you more certified front ends (EFI Fiery, DocuPress, Splash) to meet your needs. What's more, the affordable



DocuColor 5750

DocuColor 5750 is only the newest in the Xerox family of color solutions. The Xerox Regal 5790 is a proven workhorse and the DocuColor 40 offers consistent, quality color at breathtaking speed (40 ppm). They all come with Xerox service, quality and our Total Satisfaction Guarantee. To see how we can help, visit our Web site at www.xerox.com. Or call 1-800-ASK-XEROX, ext.671.

THE
DOCUMENT
COMPANY
XEROX

High-Capacity Hard Drives



SOONER OR LATER, it will happen: You'll run out of hard-disk space. With all that great shareware you've located on the Internet, all those applications that seem as capacious as the CD-ROMs on which they were shipped, all the huge files you created with those huge applications — your current hard disk is bursting at the seams.

If you're in the market for a new hard drive, read on. There's a great variety of external hard drives available in all manner of shapes, capacities, speeds, and prices. This month, MacUser Labs evaluated 21 high-capacity hard drives.

Each drive was tested with MacBench 4.0, the Mac industry's benchmark standard. Because basic productivity applications such as Intuit's Quicken and Microsoft Word and

Excel make different demands on a hard drive than do applications used by graphic artists and publishing professionals, MacBench was designed to test drives in two fundamentally different ways: Its Disk test replicates the disk-access activity of 11 top-selling business applications, and its Publishing Disk test is based on the actual disk-access calls made by Adobe Photoshop and QuarkXPress.

When we hooked each drive up to the external SCSI port of a Power Mac 7600/132, we discovered that the fastest drives overall, as a group, are those that are based on 4-GB or 9-GB Ultra SCSI Seagate mechanisms. The overall fastest drive is the 4-GB Direct Connections ST34501, with a top score of 286 in the Disk test (a score of 100 represents the speed of a 250-MB Quantum drive in a Power



Sure, the StreamLogic Hammer 23000 is a bit larger than most other hard drives — but it holds a whopping 23 GB.

Mac 6100/60) and a respectable 215 in the Publishing Disk test. The highest of the Publishing Disk scores was turned in by the 4-GB

PHOTOGRAPHY / LON CLARK

BIG STUFF / ratings, specs, and speed charts



THE RIGHT HARD DRIVE to choose depends on your needs. If you're simply looking for inexpensive storage, you

can find plenty of "fast enough" drives at attractive prices. However, if you want speed for general office applications, focus on the MacBench

4.0 Disk test. If you're a graphics or publishing pro, speed is an absolute necessity: Check out the top performers in the Publishing Disk test.

RATING	DRIVE	ESTIMATED STREET PRICE	CAPACITY	MECHANISM	ACTIVE TERMINATION	CASE	SOFTWARE/MANUAL	SUPPORT	WARRANTY
2 TO 3 GB									
★★★★	✓ La Cie D2 2160MB	\$349	2 GB	IBM	yes	●	●	+	5 years
★★★★	APS Q2100	\$379*	2 GB	Quantum	yes	+	●	+	5 years
★★★★	ProDirect PDI2171N	\$699	2 GB	Seagate		●	●	+	5 years
★★★★	Liberty 30 Series 2.1-GB	\$799*	2 GB	Seagate	yes	●	●	-	1 year
★★★★	MicroNet Advantage 3000	\$660 [†]	3 GB	Quantum		●	●	-	1 year
4 GB									
★★★★	✓ Direct Connections ST34501	\$1,599*	4 GB	Seagate		●	●	+	5 years
★★★★	La Cie D2 4300MB	\$849	4 GB	Quantum	yes	●	●	+	5 years
★★★★	ProDirect PDI4371N	\$1,099	4 GB	Seagate		●	●	+	5 years
★★★★	StreamLogic Hammer 4100	\$1,295	4 GB	Seagate		●	+	●	5 years
★★★★	Apple 4230MB	\$699	4 GB	IBM		●	●	+	3 years
★★★★	Liberty 30 Series 4.3-GB	\$1,599*	4 GB	Seagate	yes	●	●	-	1 year
★★★★	APS WD4300	\$959*	4 GB	Western Digital	yes	+	●	+	5 years
★★★★	Direct Connections E4360W	\$1,099*	4 GB	Seagate		●	●	+	5 years
★★★★	Dynatek HDA4.1M	\$829	4 GB	Micropolis		+	●	+	5 years
9 GB AND UP									
★★★★	Direct Connections ST19171	\$2,099*	9 GB	Seagate		●	●	+	5 years
★★★★	✓ ProDirect PDI9171N	\$1,899	9 GB	Seagate		●	●	+	5 years
★★★★	StreamLogic Hammer 8700	\$2,095	9 GB	Seagate		●	+	●	5 years
★★★★	APS MS9000	\$1,849*	9 GB	Micropolis	yes	+	●	+	5 years
★★★★	Liberty Model 70 9.1-GB	\$2,499*	9 GB	Seagate	yes	●	●	-	1 year
★★★★	StreamLogic Hammer 23000	\$4,454	23 GB	Seagate		●	+	●	5 years
★★★★	Dynatek HDA9.1M	\$1,299	9 GB	Micropolis		+	●	+	5 years

✓ MacUser BEST BUY *Direct price. [†]List price. ■ Best performer in test.

LISTING IS ALPHABETICAL WITHIN GROUPS OF EQUAL MOUSE RATINGS.

+/OUTSTANDING ●/GOOD -/FAIR

StreamLogic Hammer 4100: a snappy 230.

We were disappointed by the speed of the APS Q2100 and the MicroNet Advantage 3000. They're based on the Quantum Fireball mechanism and posted the lowest Disk and Publishing Disk scores. But although they're not speed demons, both the APS Q2100 (\$379 direct) and the MicroNet Advantage 3000 (\$660 list) are priced attractively for home or small-office users. A newer Quantum mechanism, the Quantum Fireball TM, is used by the La Cie D2 4300MB, which posted respectable speeds.

We at MacUser Labs were frankly astonished when StreamLogic sent us a 23-GB Hammer 23000. Its \$4,454 price tag may seem steep, but the price works out to a mere \$.19 per megabyte. It may not be a speed burner (if you need that much capacity and speed, invest in a RAID system), but if you're the type of shopper who buys those 15-gallon tubs of pork 'n' beans at Price Costco, the Hammer 23000 is for you.

Case Study

Hard-drive cases have drastically changed from the simple, no-nonsense designs of five years ago. Today, most vendors ship drives with industrial-strength cases; elegant (and sometimes flashy) lines; and a few extras, such as active termination, extra AC outlets, or rubber feet for side mounting.

Although all the cases we looked at were sturdy, they varied in style and function. The Dynatek drives come in the gaudiest cases — two-tone taupe and beige. The most-straightforward-looking drives are from Direct Connections, in a simple gray metal case. If you want a superslim drive, look at the MicroNet and La Cie drives. The Liberty drives aren't quite as slim, but they're small enough for transport and come with a carrying case. APS' excellent SR2000 case features exclusive IC³E (integrated climate control electronics) circuitry, which turns on the case's fan only when needed, reducing overall noise while protecting your investment.

The drives we tested are listed by capacity and then by rating within each size category. MacBench 4.0 scores are relative to those of an

Apple Power Mac 6100/60 with a 250-MB internal Quantum hard drive, which is given a baseline score of 100. Longer bars are better.

MACBENCH 4.0 SCORES

DISK

PUBLISHING DISK



smart shopper

5 questions to ask when you're buying a high-capacity drive:

1. What is the drive's price per megabyte? (To figure this out, divide the price of the drive by the capacity of the drive, in megabytes.)
2. Does the case's construction meet your needs? Is it a low-profile case? Transportable? Side-mountable?
3. Is the drive's termination switchable?
4. What type of SCSI connector is on the drive, and does the drive come with the appropriate cables?
5. Do you need to buy an interface card to enable your Mac to take advantage of Ultra or Wide SCSI?

The Bottom Line

If you're a desktop-video or graphics professional, you need not only a lot of capacity but also a lot of speed: The 4-GB Direct Connections ST34501 and the 9-GB ProDirect PD19171N are excellent choices. If you simply want extra storage space for your desktop Mac at home or in the office, a La Cie D2 2160MB will meet your needs and save you money. / ROMAN LOYOLA

MacUser Associate Editor Roman Loyola wants a StreamLogic Hammer 23000 so that he'll no longer have to save image files in JPEG format. MacUser Labs Associate Project Leader Martin Wong managed the testing for this report.

DIRECTORY

Apple Computer (La Cie)

Beaverton, OR
800-999-1179
503-520-9000
<http://www.lacie.com/>

APS Technologies

Kansas City, MO
800-235-8935
816-920-4109
<http://www.apstech.com/>

Direct Connections

Chanhassen, MN
800-572-4305
612-937-9604
<http://www.directdc.com/>

Dynatek

Bedford, NS, Canada
800-461-0052
902-832-3000
<http://raider.dynatek.ca/index.htm>

La Cie

Beaverton, OR
800-999-1179
503-520-9000
<http://www.lacie.com/>

Liberty Systems

Santa Clara, CA
408-983-1127
<http://www.libertyinc.com/>

MicroNet

Irvine, CA
714-453-6100
<http://www.micronet.com/>

ProDirect

Bloomington, MN
800-524-9952
612-941-1805
<http://www.pdisales.com/>

StreamLogic

Menlo Park, CA
415-833-4610
<http://www.sledgehammer.com/>

Adobe Photoshop



POWER PLUG-INS

ASK ANY PRO why the Mac remains the hands-down choice for graphics, and you'll probably find out that it's because Windows doesn't cut the mustard in two important respects: color management and third-party plug-ins. Hmmmm . . . you must be a Mac-head — you *are* reading this magazine — but have you been taking full advantage of these sources of jealousy?

We wanted to know how the experts make the Mac advantage work for them, so we asked four of them to look closely at the program in the

**MacUser's experts pick
the top 24 plug-ins for
effects, prepress, and
Web design.**

center of the computer-graphics universe —

Adobe Photoshop — and the plug-ins that make it shine. They searched through piles of software, consulted with peers, and examined their work habits to pick the 24 best plug-ins available for artistic effects, prepress, and Internet design. It's third-party plug-ins such as these that let us harness the power of Photoshop for our specific needs, no matter what our specialty. And it's these

plug-ins, many of which are Mac-only, that can give you a competitive edge. From Apple's free color-management ColorSync plug-ins to the Web-color wonder PhotoGIF, you won't find more of a variety of plug-ins anywhere else.

Be aware that these are no lightweight tools and many require PowerPC computers and make serious RAM demands. If graphics are your business, however, take note — these potent plug-ins can make your Mac a graphics powerhouse.

Special Effects

I'm a filter junkie, but I must confess that I prefer ones that leave me room to be creative. To my mind, you're cheating if you generate a preset texture and use it as is. You need to apply it multiple times, in many different ways, or in combination with other filters to make it work your own.

What follows are my ten favorite Photoshop plug-ins for artistic effects. They range from practical filters I find essential for the graphic artist to a few so quirky and different that they're great to have just in case. Some of these plug-ins have a wonderful interface and provide great results. Others make me curse when I use them, but use them I do. The common denominator is that they all let us achieve artistic effects in Photoshop that we couldn't create easily any other way.

Fabulous Filter Sets

Filter sets offer something for everyone and usually sell at a bargain price. I can't start anywhere but with **Kai's Power Tools 3**, from MetaTools, which set the standard against which all other special-effects filters are judged. From its limitless options for creating colors, textures, and patterns to its indescribably . . . *unique* interface, Kai's Power Tools embodies two of the best qualities of artistic-effects plug-ins — it's both useful and inspiring.

The major filters, Gradient Designer and Texture Explorer, are potent starting points for creating distinct textures and colors. The two most interesting additions in this version of the product are the Interform filter, which lets you blend two textures (and create a QuickTime movie from the results), and Spheroid Designer, which creates 3-D balls useful as Web buttons or bump-mapped textures.

I enjoy most of Kai's fun interfaces, but I don't like the cluttered Lens f/x UI. I also long for some of version 2.1's filters that worked better than those in this version, especially the pixel and noise filters. You'll find some of these on the Power Tools CD-ROM in the Cool Stuff folder.

Another essential filter set with a slightly different spin is **Eye Candy 3.0** (formerly called The Black Box), from Alien Skin. This set made its mark by being the first to automatically create drop-shadow and embossing effects that once required a Photoshop Master's degree to create. This release has faster, better, more powerful, and easier-to-use versions of those practical filters but also has flashy new features.

The additions most likely to catch your eye are the Fire and Weave filters. One look at their presets will illuminate some of the unusual effects you can achieve with just a little fiddling. Eye Candy's 21 filters are powerful and wide-ranging, but sometimes their differing names and results can be confusing — you'll find that the Fur filter's effects, for instance, are quite unfurry. Taken as a whole, however, this is a solid set.

A newer addition to the field is **WildRiver SSK 1.0**, from DataStream. Especially notable for creating eye-catching text effects that resemble

By Sherry London

shiny metal, smoke, and wood, this filter set also offers a variety of shadow, glow, bevel, and mosaic effects.

WildRiver has many standouts. Adding to the appeal of the MagicMask filters' 24 text effects is the fact that they can be layered to create entirely different results. Also, some of

the best atmospheric-lighting effects I've seen were created with the grayscale gradients in the MagicCurtain and MagicFrame filters. Web designers will appreciate DekoBoko, which creates bevels and is handy for making navigation buttons.

Unfortunately, a truly dense interface combined with vaguely named controls (what's a "melt-level," anyway?) make using this set difficult. Even after you've carefully reviewed the manual, WildRiver works best if you have time to explore its potential.

When you need something that offers more functionality than flash, look no further than **Extensis PhotoTools 1.0**, from Extensis, an eminently practical set of filters for setting text and creating shadows, glows, and bevels. The interface is clean and easy — it just works!

The PhotoText filter alone is worth the price of the entire package. PhotoText helps you work around Photoshop's limited text abilities by allowing you to see and position your text precisely on a layer; kern letters; and change fonts, sizes, and colors character by character. Even if your final images demand text that has the precision and rasterizing quality you can get only with Adobe Illustrator, this product can still be an indispensable comping tool. The winner of MacUser's 1996 Editors' Choice Award for Best New Design Tool, this polished set of filters will quickly pay for itself in saved time.

Texture Tools

Globs of paint, rough woven cloth, the warped and brilliant patterns of stained glass — texture filters aim to re-create such effects.

EXPERTS in the Field

KAI'S POWER TOOLS: Sensational and Sensible Tool

Eric Reinfeld loves to push Kai's Power Tools to the limit. The head of New York City's Digital Design, he created this piece by using Kai's Fractal Explorer, KPT Twirl, and KPT Gradient Designer. But Reinfeld, whose clients include *Sports Illustrated* and *Time*, admits that unless you're lucky enough to do rock-'n'-roll posters or multimedia work, you may have trouble selling "filtery" Photoshop art, even if you love the look yourself. "I do a lot of trippy stuff for multimedia projects," he explains,

"but in terms of print, I find that most people are looking for no-frills art." For him, that's where the flexibility of Kai's Power Tools pays off. He says that filters such as KPT Gradient Designer and Texture Explorer can be indispensable daily aids simply because they are powerful and quick.

Reinfeld also uses Adobe Illustrator, Adobe After Effects, GIFBuilder, and Adobe Premiere. He runs them on a 225-MHz UMAX SuperMac S900L/604e with 300 MB of RAM.

Paint Alchemy 2, from Xaos Tools, lets you make an image look like anything from an oil painting to an etching by harnessing the power of the plug-in's "brushing engine." Although you can get similar results by using the Gallery Effects filters, now folded into Photoshop 4.0, Paint Alchemy's effects are richer and more controllable.

To use the plug-in, you decide on a brush shape, the number of brush strokes, and how to mix the brush's effects with your image. You vary the color, opacity, or size of the stroke and even stroke text onto the image.

Its inexhaustible possibilities make this filter a staple in my toolbox even though it can be slow and its previews are small and hard to use. When I demonstrated Paint Alchemy to an artist who hadn't used a computer before, she recoiled. "That's disgusting," she said. "A computer shouldn't be able to do that good a job."

For generating interesting textures, I turn to Andromeda Software's **Andromeda Series 4: Techtures 1.0**, which is a unique cross between a texture generator and a library. The product ships with a large selection of textures in categories such as Foliage and Bold Embroideries, but unlike with libraries, you don't simply apply the patterns to your image with this plug-in, you *blend* them with your original.

Techtures has a beautiful interface and is a powerful tool for creating truly special textures by blending, weaving, or mapping texture to your images. My only complaints are that you can't add textures to the library and that the CD-ROM must be active.

Artists, especially those who design backgrounds for the Web, may also need textures that repeat seamlessly. For this job, Xaos Tools' **Terrazzo 2**, which makes kaleidoscopic patterns, is particularly well suited. If you're frustrated with Photoshop's limited Define Pattern command, you'll find using this plug-in to be the easiest way to create striking seamless patterns.

Terrazzo creates patterns based on the 17 mathematically possible ways to repeat a pattern across a plane. The filter lets you move a pattern-shaped outline over your image (unfortunately, you can use only a PICT file or the current image as a pattern source), previewing what will be created as you go. You can then apply the pattern to the current image or save a single repeat as a PICT file.

One-Trick Wonders

Sometimes we need tools for specialized tasks. Even if I use these filters only from time to time, they're great to have around.

Photo/Graphic Edges 3.0, Volumes I, II, and III, from Auto F/X, is wholly focused on one task: applying decorative edge effects to images. Picture a close-up snapshot of a child in a fancy dress — all four edges of the photo are straight. Very boring. Photo/Graphic Edges aims to free you from this rectangular world by offering ways to roughen, distort, or otherwise misshape the boundaries of images.

Applying the filter and previewing its results are time-consuming, and to use it, you'll need the CD-ROM in the drive and the catalog in your lap. However, among its three volumes (Traditional Edge Effects, Geometric Edge Effects, and Artistic Edge Effects), the plug-in offers almost 1,000 preset edge effects. By varying colors and combining two edges at a time to form inner and outer borders, you can create an unlimited variety.

Even more nichey — all right, downright unusual — is **SISNIKK Pro 2.0**, from M.M.M. Software. You've all seen, or at least passed in the mall, those "Magic Eye" images that reveal a hidden 3-D image if you stare at them just right. This Photoshop plug-in lets you create them yourself. You'll need only two things: a grayscale image and a seamless pattern tile. The grayscale image, placed in a channel, becomes the height map for the hidden image. For those who want to create stereograms to sell as packaging, book covers, or calendars or simply to perplex their friends, this tool performs its one task exceedingly well.

My final favorite is Andromeda Software's **Velociraptor 1.0**, a quirky filter that creates motion trails. There's a similar filter in the Eye Candy set, but this one is more exciting, because it's not limited to creating trails on a straight path. Despite its difficult interface, Velociraptor can create wiggly paths that bounce, circle back, and practically stand up and cheer. You may not often need to create motion trails, but when you do, Velociraptor is the best tool for the job.

The Final Effect

There you have it! Special-effects filters for the Mac range from the practical to the wacky. The plug-ins I've shared with you are some that shine the brightest in a galaxy of great variety. Whether they're multifilter sets that offer something for everyone or single-purpose filters that appeal to just a few, all these products are great fun, and by jogging your creativity and speeding your work, they can even help pay the bills.

Sherry London is a graphic artist, the author of *Photoshop Special Effects How-To*, and a contributing editor for *Computer Artist* magazine. Her e-mail address is 76004.1536@compuserve.com.

Effective Effects

Andromeda Series 4: Techtures 1.0 (Andromeda Software) ★★★★★
PRICE: \$119.95 (list), bundled with Velociraptor 1.0.

Extensis PhotoTools 1.0 (Extensis) ★★★★★
PRICE: \$99.95 (list).

Eye Candy 3.0 (Alien Skin Software) ★★★★★
PRICE: \$199 (list).

Kai's Power Tools 3 (MetaTools) ★★★★★
PRICE: \$199 (list).

Paint Alchemy 2 (Xaos Tools) ★★★★★
PRICE: \$99 (estimated street).

Photo/Graphic Edges 3.0, Volumes I, II, and III (Auto F/X) ★★★★★
PRICE: \$179 each (list).

SISNIKK Pro 2.0 (M.M.M. Software) ★★★★★
PRICE: \$199 (list).

Terrazzo 2 (Xaos Tools) ★★★★★
PRICE: \$199 (list).

Velociraptor 1.0 (Andromeda Software) ★★★★★
PRICE: \$119.95 (list), bundled with Techtures 1.0.

WildRiver SSK 1.0 (DataStream Imaging Systems) ★★★★★
PRICE: \$99.95 (list).



Prepress and Production

By Bruce Fraser

When people think Photoshop plug-ins, they usually think filters. I have nothing against filters — in the right hands, they can even create art — but my focus has always been on reproducing images accurately in a variety of output media, including the computer screen, color desktop printers, printing presses, and photographic film.

As a result, my collection of indispensable plug-ins does tasks such as color conversions rather than turning photographs into faux Matisse paintings. Some help me do production tasks more quickly than I could in Photoshop, some do them better than I could in Photoshop, and a few help me do things that I otherwise couldn't do.

Photoshop Autopilot

Don't confuse **ScanPrepPro 3.4**, from ImageXpress, with the various automatic "make it pretty" plug-ins. ScanPrepPro is essentially an autopilot for Photoshop that creates excellent color separations for a variety of output processes.

Winner of *MacUser's* 1996 Editors' Choice Award for Best Production Tool, ScanPrepPro can operate on existing images or drive a scanner or a digital camera. Once you've acquired an image and decided what kind of output you want, you click on OK and watch. Photoshop dialog boxes flash before your eyes, with ghostly fingers making the correct entries. ScanPrepPro sizes the image, sets black and white points, optimizes contrast and color, and does much more — all at the maximum speed Photoshop can achieve on your machine.

ScanPrepPro lets you compensate for minor exposure problems in the original and has a very effective descreening routine for previously halftoned material, but it isn't designed to fix major problems of contrast or color balance. Instead, it translates the original image very faithfully into high-quality color separations and is particularly effective at dealing with difficult output conditions. Novices can achieve great results with ScanPrepPro, but it allows enough customization to make it equally invaluable to hurried pros.

Capable Color Controllers

One of the Mac's major strategic advantages over Wintel systems is ColorSync, the built-in color-management system based on Linotype-Hell's LinoColor, the same color engine used in \$250,000 drum scanners. Basically, ColorSync does a much better job of maintaining your images' overall appearance than does Photoshop's separation engine. Photoshop converts colors the output device can't reproduce (out-of-gamut colors) to the nearest printable equivalent, but ColorSync scales the gamut of the original image into the gamut of the output device.

Photoshop supports ColorSync natively only in limited ways, but Apple's **ColorSync 2.1.1 Plug-ins** make ColorSync truly useful. Best of all, they're free, from <http://colorsync.apple.com/>. The three plug-ins

in the ColorSync set — ColorSync Acquire, ColorSync Filter, and ColorSync Export — work together to interpret ColorSync profiles embedded in images. They let you embed ColorSync profiles yourself so that apps can interpret images' color correctly, and they let you convert images from one ColorSync profile's color space to another and set source and target profiles when you open an image. ColorSync Export also lets you simulate quite

accurately your final press output on a composite color printer, saving a lot of money you'd otherwise have to spend on Matchprints.

The ColorSync plug-ins' only shortcoming is that all the intelligence is built into the device profiles. If you need to tweak an image's tonal value with a slightly different ink limit or black generation, you have to edit the profile, which isn't a minor undertaking. As a result, I've recently started using Magic Software's **Magic Separator** to handle situations in which I need extra control over the black plate. The plug-in is limited to printing processes that conform fairly closely to the SWOP (Specifications for Web Offset Publications) standard, but it enhances your control over the creation of the black plate and also does a good job of handling highly saturated out-of-gamut colors. It's a little slow in calculating previews when you change parameters, but once it's set up for a particular situation, you can process images very quickly.

Man doesn't live by CMYK alone, but Photoshop doesn't seem to know that — it handles spot color very poorly. I've found Second Glance's **PhotoSpot** very useful for producing spot-color separations out of Photoshop. The new version, **PhotoSpot CT 1.0**, goes beyond its predecessor in also offering the ability to create extra color plates — variously known in the printing trade as bump, touch, or kiss plates

EXPERTS in the Field

SCANPREPPRO: Fast, Flexible Photo Fixer

David Rocha found a solution in ScanPrepPro that its developer, ImageXpress, hadn't necessarily planned. As a senior phototechnology product specialist for the Associated Press, Rocha helped put Shooter — a slim version of ScanPrepPro tailored for the AP — on his photojournalists' PowerBooks. Shooter helps them quickly make basic image adjustments and compensate for their digital cameras' quirks in a predictable way. "You put Photoshop in the hands of 200 people, and no matter how much training you give them, you'll inevitably end up with a variety of

results," says Rocha. "We wanted to minimize the differences. That's something we were never able to accomplish until we got ScanPrep."

Shooter has proven its mettle at both the Olympics and the Super Bowl, as you can see in the photograph. The Associated Press — which sells photographs to newspapers worldwide — now sends photojournalists into the field with AP NC2000 digital cameras in hand and PowerBooks loaded with Photoshop on their backs. AP photography work is done completely on Macs, and ScanPrepPro is one of the reasons.

— to add intensity to colors CMYK can't easily reproduce. It also lets you create separations that have two or three spot colors, with results that are quite different from those of Photoshop's duotones and tritones. With the right images, you can get results that even look like conventional, and expensive, four-color separations.

But PhotoSpot CT offers little control over which *areas* of the image get bumped up by the bump plate. You can control the intensity of the inks but not the areas to which they apply. For such industrial-strength bump-plate generation, I turn to **MC-P/CoCo 2.2**, from Visu Technologies, now distributed in the U.S. by Pantone. This little gem lets you assign spot inks to Photoshop channels and apply them to images, using a very smart color-range selector. You can manipulate sliders to control the size of the color-range selection and the intensity of the spot ink. An interactive preview shows you the effect of the extra plate, and you can read the ink densities by moving the cursor over the image. MC-P/CoCo is probably the best tool I've seen so far for creating HiFi color separations by hand, but it's also extremely useful for dealing with bump plates and spot varnishes.

Another of my Photoshop tasks is editing the color balance of images, but color can be tricky to eyeball out of context. It can be difficult to distinguish a green cast from a yellow one, for example, until you try to fix it and see the results. Photoshop's Variations command tries to remedy this by showing you a range of color adjustments on-screen, but it lacks precision. Where Variations fails, **Test Strip 1.0**, from Vivid Details, succeeds. Test Strip takes the basic idea behind Variations and makes it useful for professionals. In addition to letting you see variations of color, tone, and saturation values on-screen, it lets you use *much* smaller increments of adjustment; allows you to adjust a single color; arranges the results like a photographer's test strip (hence the name); and best of all, lets you print the strip itself.

Production Problem Solvers

Photoshop can make multichannel documents, but it is not able to export them in a way page-layout programs can understand. At the moment, the only really useful format for print jobs that have more than four colors is EPS DCS 2.0, which QuarkXPress handles perfectly. Because Photoshop can't export DCS 2.0 on its own, I use two

plug-ins: **PlateMaker 1.0.2**, from alap, and **Channel/24 1.0**, which is from Visu Technologies and distributed by Pantone. PlateMaker is a Photoshop Export plug-in that writes DCS 2.0 files from multichannel documents. It's particularly useful for knocking a silhouetted image or filled type out of a Pantone background, and it's very easy to use. Its main limitation is that it's strictly an Export plug-in. Sometimes I need to open DCS 2.0 files in Photoshop, and for that I need Channel/24, which is a File Format plug-in. It worked a little more smoothly under Photoshop 3.0 than it does under Photoshop 4.0, but using it is by far the quickest way of loading all the channels in a DCS 2.0 image into Photoshop. Both plug-ins offer full control over screening and support clipping paths, but Channel/24 works best in tandem with MC-P/CoCo. As a result, I generally use Channel/24 for HiFi separations and complex multichannel documents that have bump plates and keep PlateMaker around for simpler jobs involving spot varnishes and basic knockouts from Pantone backgrounds.

Photoshop 4.0 does a much better job of rasterizing generic EPS files than did version 3.0, which was limited to Illustrator format, but I still find Total Integration's **Epilogue 2.1** invaluable. Epilogue is a full-blown PostScript Level 2 RIP in the form of a Photoshop plug-in. It can rasterize any EPS file into Photoshop at any size, in either RGB or CMYK mode. I use it to create screen previews from PC-generated EPS files and to check trapping in QuarkXPress and PageMaker files.

I said I'm not a big filter fan, but I do keep coming back to MetaTools' **KPT Convolver 1.0**, a veritable Swiss-army knife of a filter. You may love or loathe the interface, but you'll appreciate effects ranging from sharpening, color-balance, and contrast enhancement to wild embossing and hallucinogenic color. The Tweak mode provides a fast and flexible way to remove color casts, fix contrast problems, and sharpen images, all in one pass. The Color Contrast button also does amazing things to flat, muddy images — it's like wiping soap film off a window pane.

Closing Impressions

That's my top ten. If you thought third-party Photoshop plug-ins were strictly for designers and creative types, think again: The right plug-ins can solve a whole host of production problems. Photoshop is a great creative tool, but it's also fast becoming the standard platform for reproducing color images in print. These plug-ins help artists and photographers realize their vision without their having to become rocket scientists in the process. I find that profoundly satisfying.

MacUser Contributing Editor Bruce Fraser is a photographer and coauthor of *Real World Photoshop 4.0* (Peachpit Press, 1997).

Prepress Prerequisites

Channel/24 1.0

(Pantone) ★★★★★
PRICE: \$299 (list).

ColorSync 2.1.1 Plug-ins

(Apple Computer) ★★★★★
PRICE: Free.

Epilogue 2.1

(Total Integration) ★★★★★
PRICE: \$895 (list).

KPT Convolver 1.0

(MetaTools) ★★★★★
PRICE: \$199 (list).

Magic Separator

(Magic Software) ★★★★★
PRICE: \$198 (estimated street).

MC-P/CoCo 2.2

(Pantone) ★★★★★
PRICE: \$899 (list).

PhotoSpot CT 1.0

(Second Glance Software) ★★★★★
PRICE: \$595 (list).

PlateMaker 1.0.2

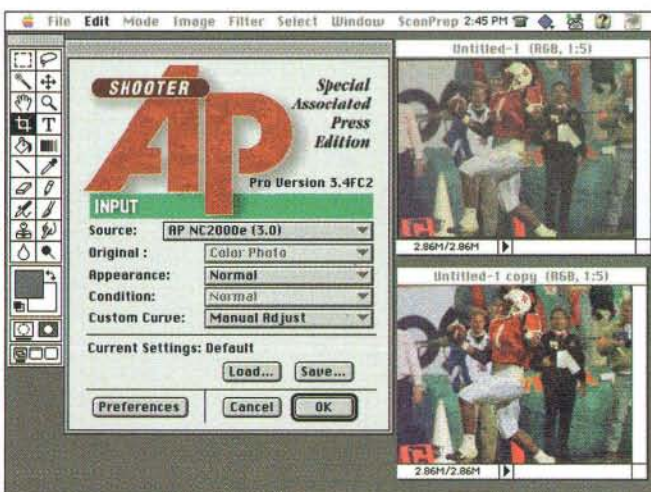
(alap) ★★★★★
PRICE: \$295 (list).

ScanPrepPro 3.4

(ImageXpress) ★★★★★
PRICE: \$695 (list).

Test Strip 1.0

(Vivid Details) ★★★★★
PRICE: \$149 (list).



Web Production

By Lynda Weinman and Joe Maller

The next frontier for Photoshop is the Web. Plug-ins stand to make as big a difference to efficient Web production as they have for prepress. Today, however, most Web designers use a Frankenstein-like collection of freeware and commercial products to make their graphics Web-ready instead of using Photoshop alone. For good reason — most of the plug-ins they need aren't there. Yet.

When we investigated the selection of Web production plug-ins, we realized there were still too few choices for us to pick favorites. As a result, what you'll see here is an introduction to what exists today. Keep your eye on these companies and the tools they make. We expect to see these products mature into essential Photoshop add-ons in the months to come.

Ideal Internet Images

On the Web, slow-loading graphics can be the death of even the best-looking pages. The designer's top priority is to create images that look good and yet have the smallest file size possible.

MacUser's 1996 Editors' Choice Awards Finalist for Best New Production Tool, **PhotoGIF 2.1**, from BoxTop Software, helps this process by converting images into Web-ready GIF files that are smaller and better-looking than similar images saved with Photoshop's built-in GIF filters. This alone makes the plug-in worth its price.

GIF images are limited to 256 colors, but 256 is still a lot where file size is concerned — using fewer colors makes for a leaner file. This plug-in gives you control over the color-reduction process by letting you choose a palette preference, dithering intensity, and bit-depth setting. Unfortunately, even though these options dramatically affect your image quality, you can't readjust them after you see a preview unless you cancel the entire plug-in and start over. Still, PhotoGIF does allow you to preset its options — a big time-saver for repeat conversions. Despite its quirky interface, once you've used PhotoGIF, there's no going back.

But Web designers don't depend on GIF files alone. GIF files are great for artwork, but we also use JPEG files, which support millions of colors and are best suited for photographic images. **ProJPEG 2.1**, also from BoxTop Software, produces JPEG files that are clearer and smaller than anything we've seen before.

This plug-in lets you tweak your JPEG files precisely, thanks to real-time previews of image quality and file size. You can quickly fine-tune the compression by using a 0-to-100 slider. Be aware, though, that Photoshop appends the wrong file extension (.JPE instead of .JPG) to non-Photoshop JPEG files, which causes serious problems with file uploading. You'll need a shareware batch renamer, such as

Drop•Rename (<http://www.best.com/~bns/ChaoticSoftware/index.html>).

You can also get a set of plug-ins that are almost identical to PhotoGIF and ProJPEG by buying the **HVS WebFocus 1.0** plug-in set, from Digital Frontiers (that company once worked with BoxTop Software, thus the current similarity of their offerings). WebFocus has two components, HVS PhotoGIF and HVS ProJPEG. As with BoxTop's PhotoGIF, images saved with HVS PhotoGIF look better than Photoshop GIFs, but the plug-in

does not offer BoxTop's extensive options and has several additional quirks. HVS ProJPEG is also similar to BoxTop's plug-in but adds some very advanced compression options for JPEG files, such as Q-Table presets and prefiltering optimization. These features don't seem to offer much — the plug-in's presets can't beat custom-generated Q-Tables, and prefiltering doesn't seem to improve image quality, instead swelling file size.

This spring, Digital Frontiers will substantially upgrade WebFocus and offer the GIF and JPEG plug-ins separately with the names HVS ColorGIF 2.0 and HVS JPEG 2.0. Our look at a beta version of HVS ColorGIF showed that a new interface and a rich set of options, including visual effects (many adopted from Digital Frontiers' specialized color tool HVS Color), may turn this plug-in into the brightest star of the category. A beta version of the new HVS JPEG 2.0 was not yet available at press time.

Our last plug-in addresses a different concern of Web designers. **PhotoCell 1.0**, from Second Glance Software, tries to streamline what's until now been a laborious and repetitive task — turning Photoshop

EXPERTS in the Field

BOXTOP'S PHOTOGIF: Web-Color Wonder

Efficiency. Efficiency. That's T. Jay Fowler's mantra, and well it should be. Fowler is the production manager of suck.com, a quirky e-zine for Web insiders that is updated every weekday by Fowler alone. Before he discovered BoxTop's PhotoGIF, he rasterized artist Terry Colon's illustrations in Adobe Photoshop and then used Equilibrium's DeBabelizer to reduce the number of colors and save the images as GIF files. Now Fowler doesn't have to waste time switching among applications, and PhotoGIF's color-reduction and palette-

management features let him make smaller (no larger than 20K), better-looking GIF files. "It lets me do what I do faster and more accurately," Fowler says. "I like the fact that I have a lot of power options. It gives me every piece of information I need." The image shown here is one of suck's images in progress. Among the other apps the suck.com staff depends on are BBEdit, DeBabelizer, Adobe Streamline, Adobe Illustrator, and even QuarkXPress (for roughing out designs). All of suck's graphics are produced on a Power Macintosh 7200.

Promising Web Plug-ins

HVS WebFocus 1.0
(Digital Frontiers) ★★
PRICE: \$129 (list).

PhotoCell 1.0 (Second Glance Software) ★★
PRICE: \$59 (direct).

PhotoGIF 2.1
(BoxTop Software) ★★
PRICE: \$45 (direct).

ProJPEG 2.1
(BoxTop Software) ★★
PRICE: \$35 (direct).

image layers into animation cells. With this plug-in, you can save Photoshop layers as GIF animations or QuickTime movies. Unfortunately, PhotoCell lacks basic animation features, such as individual interframe delay. It also fails to address fundamental issues of making files Web-ready — namely adaptive and browser-safe palette support and color-reduction options. Without these options, the plug-in creates bandwidth-hungry monster animations that aren't suitable for Web delivery. PhotoCell has a lot of potential, but as of now, we can't recommend it.

The Plug-in Promise

Although Web-related Photoshop plug-ins are in their infancy, they stand to make a big difference for efficient Web production once

the kinks are ironed out. We hope for interface improvements and more-robust feature sets that are sensitive to important Web design needs, such as palette management and file-size reduction. In other words, we look forward to the day when all these plug-ins truly fulfill their potential. ☞

Lynda Weinman is the author of several books on Web design, including *<designing web graphics 2>*. Her Web site is at <http://www.lynda.com/>. Joe Maller is a freelance computer-graphics specialist in New York City. Find out more at his Web site, at <http://www.joemaller.com/>.

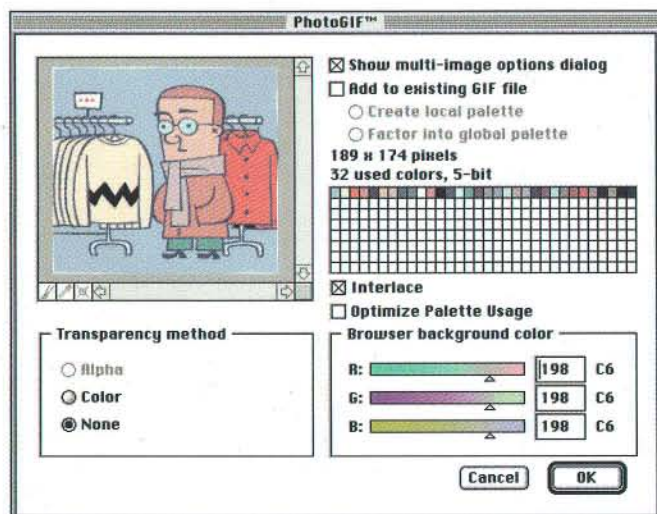
BOOKMARK

M

RELATED INTERNET SITES

- **The Plug Page**
A vast collection of freeware and shareware plug-ins.
- **Ultimate Photoshop**
Summaries of, and links to, plug-ins commercial and free.
- **PhotoBooks**
Reviews of almost every existing Photoshop book.

GO TO <http://www.zdnet.com/macuser/0697.html#plug>



GET PLUGGED IN: Vendor Directory

Plug-in Distributors

Adobe Plug-In Source Catalog
Milwaukee, WI
800-685-3547
403-261-7013 (fax)
www.plugininsource.com/

The World-Wide Power Co.
Arvada, CO
800-940-8737
303-940-0600
303-940-0601 (fax)
www.thepowerco.com/

Featured Plug-in Vendors

alap (a lowly apprentice production)
Carlsbad, CA
(products available through the World-Wide Power Co.)

Alien Skin Software
Raleigh, NC
919-832-4124
919-832-4065 (fax)
www.alienskin.com/

Andromeda Software
Thousand Oaks, CA
800-547-0055
805-379-4109
805-379-5253 (fax)
andromeda.com/

Apple Computer
Cupertino, CA
colorsync.apple.com/

Auto F/X
Alton Bay, NH
603-569-8800
www.autofx.com/

BoxTop Software
Starkville, MS
601-323-6436
601-324-7352 (fax)
www.boxtopsoft.com/

DataStream Imaging Systems
Lexington, KY
606-264-0302
606-263-0183 (fax)
www.datastream.com/

Digital Frontiers
Evanston, IL
800-328-7789
847-328-0880
847-869-2053 (fax)
www.digfrontiers.com/

Extensis
Portland, OR
800-796-9798
503-274-2020
503-274-0530 (fax)
www.extensis.com/

ImageXpress
Lawrenceville, GA
770-564-9924
770-564-1632 (fax)
www.scanprep.com/

M.M.M. Software
(products available through the World-Wide Power Co.)
www.mmmsoft.com/

Magic Software
Buffalo, NY
800-615-4787
716-855-0295
716-855-0299 (fax)
www.magicsoftware.com/

MetaTools
Carpinteria, CA
800-472-9025
805-566-6200
805-566-6367 (fax)
www.metatools.com/

Pantone
Carlstadt, NJ
888-726-8663
201-935-5500
www.pantone.com/

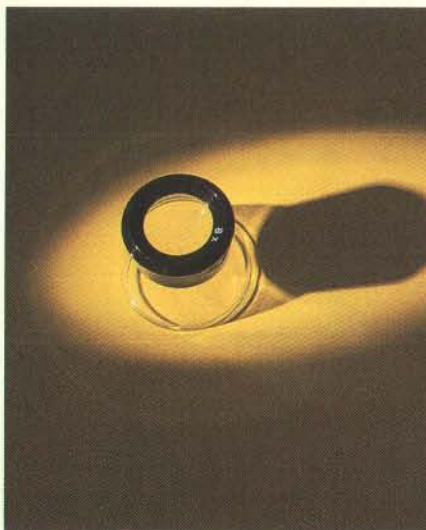
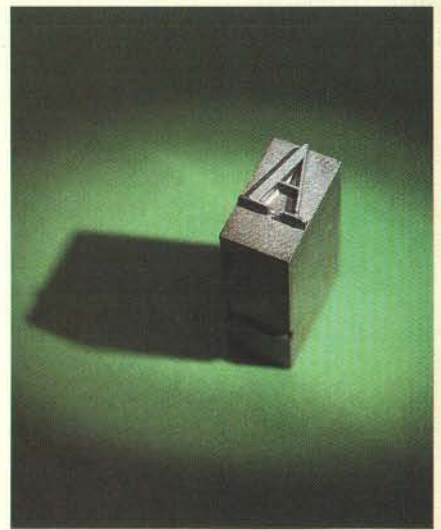
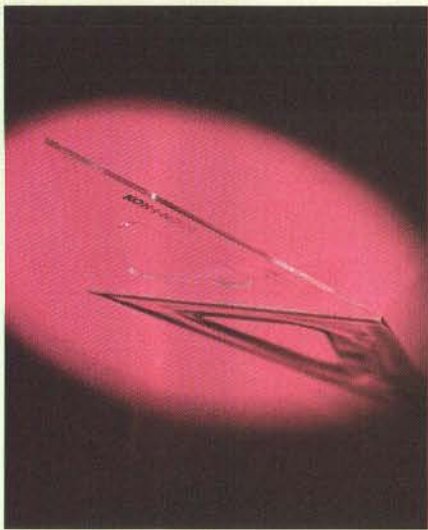
Second Glance Software
Bremerton, WA
800-682-3110
360-692-3694
www.secondglance.com/

Total Integration
Palatine, IL
847-776-2377
847-776-2378 (fax)
www.totalint.com/

Vivid Details
Ojai, CA
800-588-0274
805-646-0217
415-364-4592 (fax)
www.vividdetails.com/80/

Xaos Tools
San Francisco, CA
800-289-9267
415-487-7000
415-558-9886 (fax)
www.xaostools.com/

THE DESKTOP PUBLISHERS TOOLKIT



PHOTOGRAPHY / LON CLARK

TWO DOZEN ESSENTIAL utilities for SIMPLIFYING the lives of desktop- publishing professionals



BY KATHLEEN TINKEL

WE'VE COME A LONG WAY from the days when graphic designers and production artists labored over drawing boards and light tables to produce pasteups, but one thing hasn't changed: the debate over which tools to use. We no longer argue the merits of single-edged razor blades versus X-acto knives or T squares versus parallel rules, but our passions still run hot when we start discussing Adobe Illustrator versus Macromedia FreeHand, Zip versus SyQuest, or — in some circles, although not much here at *MacUser* — the Mac OS versus Windows.

Still, there's a surprising amount of agreement out there when you delve into the details of which productivity utilities — the digital equivalents of triangles, pica rulers, French curves, tape dispensers, and other such gadgets — today's Mac desktop-publishing professionals rely on. Starting with the members of the Desktop Publishing Forum on CompuServe, we conducted an informal telephone and online survey of designers, book-production specialists, digital illustrators and retouchers, output operators, and others. The result, after passing the critical scrutiny of *MacUser's* DTP experts, is a widely agreed-upon list of essential, field-tested utilities for Mac desktop publishers.

The only software packages we excluded from consideration were major programs — the page-layout, illustration, and image-editing giants we all know, love, and could argue about forever — and Photoshop plug-ins, which you'll find covered in "Power Plug-ins," elsewhere in this issue. Our list — which includes commercial as well as shareware programs — covers six key types of software products: font tools, text tools, graphics-file tools, color-management tools, layout tools (plug-ins for PageMaker and XTensions for QuarkXPress), and output-tweaking tools.

FONT FIDDLERS

For a desktop publisher, a good library of Type 1 PostScript fonts is invaluable — but as your collection grows, you need to manage it somehow. Storing more than a handful of fonts (say 50 or so) in the System Folder's Fonts folder is unwieldy. They're always open, slowing down such common tasks as opening and saving files, launching applications, and scrolling through font menus. Plus, it's confusing to have so many fonts, often irrelevant

ones, around all the time — you can work more efficiently if the fonts you see on menus are only those being used in the project at hand.

Until recently, we've relied on either Alsoft's MasterJuggler or Symantec's Suitcase for organizing fonts. If you're cramped for RAM, either of these is still worth using, but two new offerings make better sense for most desktop publishers today: Adobe's **Adobe Type Manager Deluxe 4.0**, which adds font management to the original ATM's font-rasterizing function, and DiamondSoft's **Font Reserve**, still in beta at press time.

The best productivity enhancement in ATM Deluxe is autoactivation — you can set the software to automatically activate fonts used in any document as you open that document. ATM Deluxe also does a routine check of all known fonts (a list the software creates from your font files) every time it is launched. In addition, the program produces an elegant, printable specimen page anytime you double-click on a font in a set or in the Known Fonts list.

Although we can't rate the still-in-beta Font Reserve in this story, we think it's worth mentioning, because it does something no other font manager does: It builds a database of your fonts that has keyword-search capabilities (some keywords are supplied automatically, and you can add your own). And it actually organizes your font files — dealing with duplicates, orphaned screen or printer fonts, and other housekeeping issues — as it creates its database. Although Font Reserve does not include autoactivation, as ATM Deluxe does, DiamondSoft has promised to release a free XTension that will provide autoactivation for QuarkXPress files.

Opting for ATM Deluxe or possibly Font Reserve would be a no-brainer, except that these programs take a lot of disk space and RAM (exact requirements vary by Mac model and by the number of fonts being managed). ATM Deluxe weighs in at roughly 4 MB of disk space (not counting the free fonts and other optional files) and asks for a megabyte or more of RAM (plus a font cache of 50K of RAM per open font). And Font Reserve, at press time, was looking like it would need about 4 MB of disk space and probably 2 or 3 MB of RAM. In contrast, the slender MasterJuggler requires only 750K or so of disk space and about 650K of RAM. (All these figures reflect requirements on a Power Mac 7600.)

If you decide not to use ATM Deluxe, you'll still need **Adobe Type Manager Rasterizer 4.0**, a utility so fundamentally useful that most desktop publishers think of it as part of the Mac OS. An updated version of this utility — providing the basic benefit of ATM (clear, readable type on the screen and from non-PostScript printers) plus two new features for enhancing on-screen type (anti-aliasing and precision character placement) — is bundled with

most Adobe products, including the free, downloadable Acrobat 3 Reader.

Adobe has also released a new version of its font-menu-organizing utility, redubbed **Adobe Type Reunion Deluxe 2.0**. ATR Deluxe still organizes menu fonts into families, but the new version allows you to change menu names of fonts (especially useful when you're working with multiple-master fonts) and group fonts by project.

Another pesky font-related problem is how to figure out which keystroke will produce a particular character in symbol, dingbat, and ornament fonts. The ideal utility should surpass Apple's limited Key Caps function, by being easy to access, by showing the characters in a large enough size for easy identification, and by letting you

Task-Taming Tools / two dozen

PRODUCT	RATING	PRICE
FONT-RELATED PRODUCTS		
Adobe Type Reunion Deluxe 2.0	★★★★	\$60
ATM Deluxe 4.0	★★★★	\$100
ATM Rasterizer 4.0	★★★★	\$19
Character Chooser 1.4	★★★★	free*
Font Reserve 1.0	beta	\$120
FontView 1.57	★★★★	\$9*
Macromedia Fontographer 4.1.5†	★★★★	\$370
TEXT-RELATED PRODUCTS		
Add/Strip 3.3*	★★★★	\$25
BEdit 4.0.3†	★★★★	\$100
CopyPaste 3.2.2*	★★★★	\$20
Spell Catcher	★★★★	\$80
GRAPHICS-FILE PRODUCTS		
Adobe Streamline 3.1†	★★★★	\$199
Extensis Fetch 1.5†	★★★★	\$100
GraphicConverter 2.7	★★★★	\$35*
Image Alchemy†	★★★★	\$295
Tracer 2.0†	★★★★	\$495
COLOR-MANAGEMENT PRODUCTS		
ColorSynergy 2.0†	★★★★	\$695
Trumatch ColorPrinter 4.1	★★★★	\$98
PAGE-LAYOUT PLUG-INS		
Extensis PageTools 2.0	★★★★	\$100
Extensis QX-Tools 2.0†	★★★★	\$100
Gluon AgencyPack	★★★★	\$99
ShadowCaster 2.0	★★★★	\$100
OUTPUT-PREPARATION PRODUCTS		
Adobe Acrobat Pro 3.0	★★★★	\$295
FlightCheck 3.08	★★★★	\$400

*Shareware, freeware, or free download.

†The program, or a closely related version of it, has been previously reviewed in MacUser. You can look up the review online at <http://www.zdnet.com/macuser/mouse.html>.

print out a crib sheet for future reference. Simon Brown's shareware **FontView**, a stand-alone application, comes the closest to these requirements: You can set it to use virtually any type size, and you can enlarge its window to fill your screen if you want. But since it's a stand-alone application, you do have to run it. In contrast, Letraset's freely downloadable **Character Chooser** sits on the Apple menu for convenient access and allows you to choose between 18- and 36-point characters — but it has a fixed window size.

The most efficient way to ensure good typographic control is often to modify fonts — putting regular capital letters into a small-caps font or creating sets of fractions, for example. **Macromedia Fontographer** is the Swiss-

army knife of font tools — and now that it comes as part of the FreeHand 7 Graphics Studio Package, it's quite a bargain.

TEXT TWIDDLERS

Even those of us who love words grow weary of dealing with text in a layout. Although today's page-layout process no longer requires that we cast off the type (estimate the amount of space needed to set copy from a typed manuscript in a particular typeface, type size, and column measure), most client-supplied text still requires some cleanup. Layout programs have filters for deleting extraneous spaces and converting to typographic (curly) quotation marks and em dashes, but these few adjustments are usually only a minor part of text preparation.

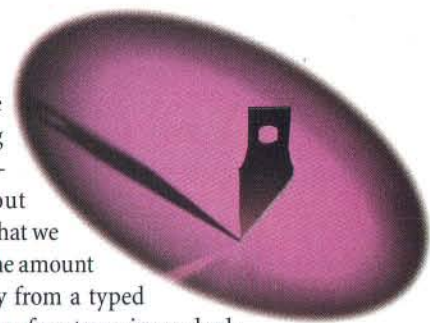
You can use an ordinary word-processing program (or the text-editing functions in your layout program) for preparing text, but a plain-text editor such as Bare Bones Software's **BEdit**, now scriptable in version 4, tends to be more efficient. Even better: Do as the book paginators do, and use a dedicated find-and-replace utility, such as Jon Wind's shareware **Add/Strip**, that lets you define collections of searches to be run sequentially and stored for reuse.

For massaging smaller amounts of text, even within your page-layout program, Script Software's shareware **CopyPaste** can be a big help. It's a slick utility that supplements the original Mac Clipboard with nine additional ones. We find it useful both for cleaning text and building Web pages — you can stockpile the most-used style tags, for example, and insert them with a quick triple-key combination.

Casady & Greene's **Spell Catcher**, the former Thunder 7, is another helpful text massager. It works interactively or after the fact to help you catch spelling and other word and sentence errors, and you can set it to replace double hyphens with an em dash and two spaces with one.

GRAPHICS-FILE GRAPPLERS

In the digital age, file incompatibilities have emerged as a problem our predecessors probably never imagined — unless perhaps they dealt with translation between languages. There always seems to be a good reason for converting a file from one format to another, and graphics files are especially tricky. Photoshop is a decent file-conversion utility for bitmapped images, but it doesn't read (or write) every format. If Photoshop can't help you, get a copy of Lemke Software's shareware **GraphicConverter**, which has become an industry standard. It's available from most online services, and the author updates it frequently.



DTP essentials

COMPANY/CREATOR DESCRIPTION

Adobe Systems	Font-menu-organizing utility.
Adobe Systems	Font-rasterizing and -management tool.
Adobe Systems	Font-rasterizing tool.
Letraset U.S.A.	Apple-menu font-character keystroke-display utility.
DiamondSoft	Font-management tool with database.
Simon Brown	Font-character keystroke-display utility.
Macromedia	Font-modification tool.

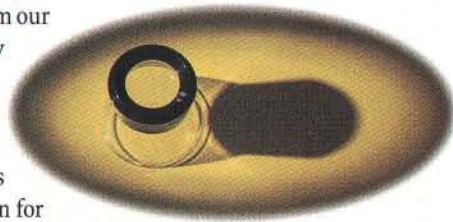
Jon Wind	Find-and-replace utility.
Bare Bones Software	Scriptable text editor.
Script Software	Utility that provides nine extra Clipboards.
Casady & Greene	Spell checker with some find-and-replace features.

Adobe Systems	Bitmap-to-vector-graphic conversion tool.
Extensis	Image-cataloging program/database.
Lemke Software	File-conversion utility.
Handmade Software	File-conversion and image-editing utility.
ScanVec	High-end bitmap-to-vector-graphic conversion tool.

Candela	Color-profiling software for use with a colorimeter.
Trumatch	Printer-calibration software for TruMatch color system.

Extensis	Tool bars, palettes, and other extras for PageMaker.
Extensis	Tool bars, palettes, and other extras for QuarkXPress.
Hologramophone Research	Scaling utility for QuarkXPress.
a lowly apprentice productions	Shadow-creation tool for QuarkXPress.

Adobe Systems	Software for converting files to PDF format.
Markware Software	Preflight tool for checking files before final output.



If GraphicConverter won't do the trick — and it's likely that no single tool can convert every file — you may want to look into Handmade Software's **Image Alchemy**. Although still new and not widely tested at press time, Image Alchemy has some features of special interest to desktop publishers; besides converting some 65 formats, it offers several scriptable image-editing features, so you can combine format and image changes in a batch process.

Creating a scalable vector graphic from a bitmap goes beyond conversion — you must trace the image, either manually or automatically. If you need more control than you get from the autotracing tools in Illustrator or Free-Hand, try **Adobe Streamline**, which lets you set sensitivity thresholds and specify whether to use centerline, outline, or line-recognition tracing. For still-more-sophisticated tracing, the all-time champ is ScanVec's **Tracer**. It uses a dongle (a hardware copy-protection device) and costs more than twice as much as Streamline, but it may prove to be the most efficient choice if you do a lot of this sort of work.

As soon as you begin to create or acquire many pictures, you should consider getting a searchable image-database program to keep track of graphics files, preferably before your collection gets out of hand. **Extensis Fetch**, from Extensis, is a good choice for an individual or a small group. Dragging a folder over the Fetch icon begins the process — the utility automatically catalogs the images (and some other files) it finds, produces a thumbnail preview, and does its best to compile a keyword list. You can edit keywords and make other adjustments to the database, which can include even files on removable media such as clip-art or stock-photo CD-ROMs. You can use Fetch over a network by buying a copy of the program for each user, but access will be somewhat limited. If you work in a larger organization and need complete multiuser access, consider the pricier but network-oriented products available from companies such as Canto Software (415-905-0300), Luminous (800-685-6736 or 206-689-6700), and MediaWay (800-632-7401 or 408-748-7400).

COLOR COORDINATORS

One thing pre-desktop-era designers rarely had to think about was color space. We either had a color photo — in which case we handed the transparency or slide to the printer — or we worked with spot colors. If a spot-color job was destined for process — or four-color (CMYK) — printing, the printer looked up the PMS (Pantone Matching System) colors in a table and mixed the inks.

Today we have all kinds of systems for color management, but their benefits remain somewhat elusive as far as desktop publishers are concerned. For color-critical projects, it often still makes more sense to leave scanning,

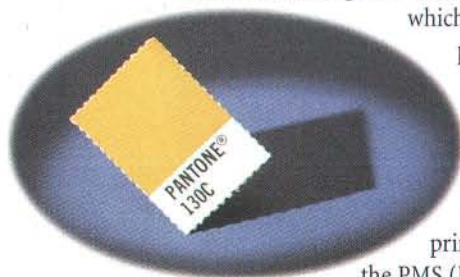
color correction, and other aspects of color management to your output service and/or printer. If you have to color-manage your own projects, you'll need to invest serious money — over \$1,000 on a colorimeter, such as Light Source's Colortron or X-Rite's Digital Swatchbook, and at least half again that much on profiling software, such as Candela's highly regarded **ColorSynergy**. Plus, you'll have to invest a major chunk of time and effort in changing your working habits and environment — calibrating your scanner, monitor, and other devices and controlling ambient lighting while working.

The color tool still most relied on by desktop publishers is a holdover from the predigital era: printed color-specifier books. If you use PMS colors and actually print in those inks, get the classical Pantone Color Formula Guide and make color choices from the books, not from the small swatches shown in software color pickers. If you sometimes use PMS colors in your layouts but print with process (CMYK) inks, which cannot reproduce the full range of Pantone colors, get the Pantone Process Color Imaging Guide for the same reason — and select the matching Pantone designations in your software. If you often find yourself in this situation, you may instead want to consider the Trumatch system, which provides for a logical array of color choices that are all derived from CMYK inks in the first place. Get the Trumatch Colorfinders and, if you're printing your final documents or proofs on a desktop color printer, Trumatch's companion **Trumatch ColorPrinter 4.1** software for calibrating the printer.

PAGE-LAYOUT PROPS

Drawing boards always used to accumulate a lot of tools and other clutter, generally managed with the aid of rotating tool bins and taborets (rolling carts with drawers and cubbyholes). Today's software equivalent of these aids would have to be the sets of plug-ins and XTensions that Extensis offers for the major DTP applications and that provide tool bars and palettes to make the applications more manageable. Although **Extensis PageTools** (for PageMaker) and **Extensis QX-Tools** (for QuarkXPress) both place too many icons, palettes, and other items on your screen (no matter how large a monitor you have), these useful plug-ins are easy to tame. Turn off the menu bars, learn to call for palettes from the keyboard as needed, and take time to find the helpful gems among the dross. Deciding which functions, exactly, will be gems for you may take a little thought, but here are some of the most useful we've discovered.

In PageTools, we particularly like PageType (for circumventing PageMaker's lack of character-based styles by applying settings to text), PageGlossary (for storing fully formatted phrases), PageScaler (for resizing by a specified percentage), PageTabs (for storing tab settings



independently of the Styles menu and placing a right tab precisely at the right-hand margin), and PageAlign (for aligning page elements easily).

In QX-Tools, our favorites are QX-CopyStyle (for applying attributes from one object to another, even across documents), QX-Print (for selecting discontinuous pages and page ranges for printing and for setting spot colors to print as CMYK), and QX-Filters (which gives QuarkXPress the ability to use Photoshop plug-ins).

A couple of the tools in QX-Tools are best supplanted by more-specialized tools for performing the same functions in QuarkXPress. Although QX-Tools includes a shadow tool, **ShadowCaster**, from a lowly apprentice production, is more popular with QuarkXPress power users. It lets you create soft, realistic shadows. QX-Tools also includes a scaling utility, but the one in **Gluon AgencyPack**, from Hologramophone Research, is extraordinary.

For more on plug-ins, contact XChange (800-788-7557 or 303-225-2484), the primary retail clearinghouse for XTensions, and World-Wide Power (800-940-8737), which sells XTs as well as plug-ins for Photoshop and other DTP products.

OUTPUT ORGANIZERS

When it comes to scanning for problems before you submit a job to a service bureau, digital layouts just aren't as simple to deal with as pasteups were. Output operators contend that the problem with most jobs they receive is missing components — fonts and graphics files, most typically. One method of ensuring that you get all needed elements to the service bureau is to print your files to disk with fonts and graphics included, but PostScript print files are uneditable. A more flexible solution is to gather up all the elements, including fonts embedded in enclosed EPS files. You can do this manually — PageMaker's Save for Remote Printing and QuarkXPress' Collect for Output options catch the file and linked graphics, for example; then you need only copy the fonts. On the other hand, Markzware's **FlightCheck**, a stand-alone preflight tool used by desktop publishers as well as output services, does the whole thing, even including fonts within EPS files.

Alternatively, find out if your output service will accept Acrobat PDF files. If so, you can use Adobe's Acrobat Distiller, part of the **Adobe Acrobat Pro** package, to create a PDF that includes everything — all graphics and fonts. In addition, distilling a file seems to streamline the

PostScript, making it more likely to output reliably, and the process acts as a useful check — if a file cannot be converted to PDF by Distiller, it probably isn't going to output correctly either.

TOOLS AT THE READY

Today's desktop publisher is often responsible for handling tasks that were covered by half a dozen graphic-arts specialists a decade ago. And being a jack-of-all-trades — expected to master them *all* — isn't easy, especially when the tasks have changed so much in such a short time. But the handy little tools suggested here go a long way toward taming those tasks — and can actually give you some time to argue the burning questions of the day with your fellow desktop publishers. Now, about the QuarkXPress versus PageMaker conundrum . . .

Kathleen Tinkel writes regularly on graphic-design and prepress topics for *Step-by-Step Electronic Design Newsletter* and other publications.

Directory

a lowly apprentice production
(products available through the
World-Wide Power Company)
Arvada, CO
800-940-8737
303-940-0600
303-940-0601 (fax)
<http://www.thepowerco.com/>

Adobe Systems
San Jose, CA

800-833-6687
408-536-6000
408-537-6000 (fax)
<http://www.adobe.com/>

Bare Bones Software

Bedford, MA
617-778-3100
617-778-3111 (fax)
<http://www.barebones.com/>

Simon Brown

San Francisco, CA
sibr@aimnet.com

Candela

Burnsville, MN
800-944-1355
612-894-8890
<http://www.candelacolor.com/>

Casady & Greene

Salinas, CA
800-359-4920
408-484-9228
<http://www.casadyg.com/>

DiamondSoft

Mill Valley, CA
415-381-3303
415-381-3503 (fax)
<http://www.fontreserve.com/>

Extensis

Portland, OR
800-796-9798
503-274-2020
503-274-0530 (fax)
<http://www.extensis.com/>

Handmade Software

Fremont, CA
800-252-0101
510-252-0101
510-252-0909 (fax)
<http://www.handmadesw.com/>

Hologramophone Research

New York, NY
212-529-8845
212-529-2565 (fax)
<http://www.hologramophone.com/>

Lemke Software

Peine, Germany
+49-5171-72200
+49-5171-72201 (fax)
<http://www.goldinc.com/Lemke/>

Letraset USA

Paramus, NJ
800-343-8973
201-845-6100
201-845-5047 (fax)
<http://www.letrasetusa.com/>

Macromedia

San Francisco, CA
800-326-2128
415-252-2000
415-626-0554 (fax)
<http://www.macromedia.com/>

Markzware Software

Santa Ana, CA
800-300-3532
714-756-5100
714-756-5108 (fax)
<http://www.markzware.com/>

ScanVec

Wilmington, MA
800-866-6227
508-694-9488
508-694-9482 (fax)
<http://www.scanvec.com/>

Script Software

Crystal Bay, NV
916-546-9005
<http://members.aol.com/copypaste1/index.html>

Trumatch

New York, NY
800-878-9100
212-302-9100
212-302-0890 (fax)
<http://www.trumatch.com/>

Jon Wind

Maplewood, MN
<http://www.macuser.com/software/>



RELATED INTERNET SITES

• desktopPublishing.com

Links to DTP-related news, reviews, message boards, and more.

• PageLab

Online supplement to *Before&After* magazine features animation-enhanced discussions of design-related technical issues.

GO TO <http://www.zdnet.com/macuser/0697.html#dtp>

The Newton WEIGHS in



Surf the Web, deal with e-mail, crunch spreadsheets, write real documents, and keep your life together with this 1.4-pound wonder.

YOU'D BE SURPRISED how much a PowerBook, its AC adapter, a few spare batteries, and a charger can weigh. If you're a business traveler, you already know — have you measured your arms lately? So, what if we told you that for under \$1,000 and under 2 pounds, you could possess a self-contained personal-information manager — complete with e-mail client software, a phone-call and fax manager, a Web browser, a word processor, and an Excel-compatible spreadsheet program — that ran on alkaline batteries for days or weeks at a time?

The recently released Apple Newton MessagePad 2000 is a traveling companion that may displace the PowerBook for many road warriors. We put this 1.4-pound wonder to the test in our labs, in the field, and at home, trusting our daily lives to its scheduler, sending and receiving faxes and e-mail, surfing the Web, writing stories with its word processor, creating spreadsheets — and, of course, transferring information to and from our desktop Macs. In fact, this is the first Newton that really delivers and leaves little for even the most dedicated naysayers to criticize.

A Truly Mobile Computer

With a U.S. Robotics Pilot costing around \$200 and Microsoft Windows CE-based palmtops available for roughly \$600, Apple is aiming

By Jeff Pittelkau

high with its superfast, fully loaded MessagePad 2000, priced at \$949 without the PelicanWare QuickFigure Pro spreadsheet program, \$999 with all bundled applications, or \$1,099 with applications plus a keyboard and Newton/keyboard carrying case. Unfortunately, none of these configurations includes a modem.

A thousand bucks is steep for a PDA (personal digital assistant), until you consider what you get when you pay less: A Pilot has limited functionality, a small screen, no keyboard, and no productivity or Internet applications. A Windows CE-based palmtop has only a chiclet keyboard for input and the look and feel of a shrunken Windows 95 interface (see the "Competition" sidebar for more on these MessagePad alternatives).

The Newton integrates PIM, productivity, and Internet applications in a simple user environment that doesn't — and shouldn't — feel like that of a desktop computer. Its user environment is further enhanced by Intelligent Assistance, which understands commands in English, such as "lunch with Andy next Thursday," and remembers things you do often, such as calling friends and business associates. The Newton user environment along with the MessagePad 2000's tremendous expansion capability, processing power, large backlit screen, and huge library of third-party software (thousands of Newton applications already work on the 2000) make it the only truly *mobile* computer in the palmtop class. In fact, there is very little productive work you can't do on the 2000 that you can on a PC or Mac notebook.



Newton on Steroids

Forget everything you've heard about the Newton. With the MessagePad 2000, Apple has literally reinvented the whole Newton experience.

If you've tried to use a MessagePad in the past, you probably had three complaints: The processor was too slow; the screen was too small; and, with only one PC Card slot and limited RAM, you had to play shell games with RAM cards and your modem.

With the MessagePad 2000, all these problems go away. The 162-MHz Digital StrongARM RISC processor makes switching among applications, searching for data, or even using handwriting recognition nearly instantaneous, while still delivering excellent battery life. The large 480-x-320-pixel LCD screen, able to display 16 shades of gray, is great for reading e-mail, doing word processing, working with spreadsheets, and browsing the Web. Screen backlighting is bright, without being a burden on the batteries. The 2000's 1 MB of system DRAM and 4 MB of flash RAM leave plenty of room for lots of data and additional applications. Plus, the dual Type II PC Card slots allow

users to install both a modem and a flash-RAM card at the same time.

The high-quality built-in speaker is handy not only for playing the nifty new alarm sounds loud and clear but also for playing back digitized recordings you can make in the Notepad application. You'll have no problem waking up to the loud but pleasant daily alarm when it plays from this new speaker.

With the 2000, Apple has made great strides in advancing the MessagePad's communications capabilities. The infrared communications transceiver now supports IrDA for cable-free printing to IrDA-capable printers. There's also a new I/O port, called the Newton Interconnect, that supports high-speed RS-422 serial communication, LocalTalk, keyboard, power-in and -out, as

well as line-level audio-in and -out. Regrettably, to use the supplied serial cable or keyboard, you must use a bundled adapter — one more thing to lose when traveling. Hopefully, Apple will ship keyboards and serial cables with the new connector built in, in the very near future. The 2000 even has an internal connector for a modem or wireless-communications card. Thus far, however, no one has announced plans to take advantage of this slot.

The one missing port whose absence will keep some Newton wannabes on PowerBooks? Video-out, for presentations (hint, hint).

At first glance, the MessagePad 2000 seems a bit larger than the MessagePad 130 and 120, which came before it — it's 4.7 x 8.3 inches. But at 1.1 inches thick, it's actually a tad thinner than its older cousins. Weighing 1.4 pounds with batteries, it's a tad heavier too. The new form factor is great for a backpack or briefcase, but it's too big for a pocket.

The full-sized, brushed-metal pen that hides inside the MessagePad 2000 is the most elegant we've seen with any palmtop. There's also a pop-out pen holder, which, coupled with the 2000's ability to rotate

the screen to any of four orientations, allows you to place the pen near your right or left hand or keep it handy but out of the way of the keyboard, serial, and modem cables. Finally, the new design features a sturdy lid that opens and tucks away behind the 2000 or that can be removed entirely. The new Newton has mounting holes for other lid designs as well as a place for a connection for a rumored-to-be-possible lid that doubles as a keyboard. We're eagerly awaiting this option from Apple or third parties.

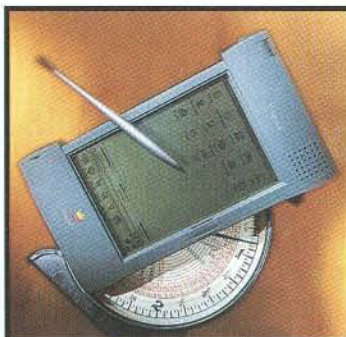
All the Software You Need — Well, Almost

No more nearly worthless implementation of Pocket Quicken. This time out, Apple got the bundled Newton applications right.

Preinstalled on the 2000 are the usual Newton applications for managing calendar events, to-do items, names, and phone calls and taking notes. Apple adds to this its own word processor, called Newton Works, which includes PelicanWare's QuickFigure Pro spreadsheet program; Netstrategy Software's EnRoute i-net e-mail client software; and AllPen's NetHopper Web browser. And most important, Apple includes the Newton Connection Kit 2.0, albeit in a beta form; the final release will come sometime later this year and will be free to MessagePad 2000 owners.

Little has changed in the calendar, phone-call-manager, names, or Notepad applications that come with the MessagePad. Dates support all the event types you'd expect: repeating and special events, to-do items, and meetings. The Notepad supports recognized and nonrecognized ("ink") text, sketches, and shapes in your choice of notes, outlines, or checklists. You can purchase hundreds of third-party Notepad stationery plug-ins that add everything from graph paper to boilerplate business memos.

The word processor is pretty basic — supporting justification, page



Apple Newton MessagePad 2000 ★★★★★

Pros: Fast. Accurate handwriting recognition. Digital-voice-recording capability. Good bundle of Internet and productivity apps. Large, backlit screen. Dual Type II PC Card slots.

Cons: Large form factor; won't fit in pocket. Expensive. Modem not included. Optional keyboard is awkwardly big but not full-sized.

breaks, multiple fonts, and choices of type sizes and styles. It features a find-and-replace utility as well as a spelling checker and QuickSketch, which lets you embed sketches by using the Newton's Shapes or Sketches tool, but it does not support handwriting recognition, so you'll need to peck away at the on-screen keyboard or attach the optional Newton keyboard.

The QuickFigure Pro spreadsheet module in Newton Works is a capable enough program, featuring rudimentary built-in functions; a simple bar-charting utility; and QF Exchange, which allows direct uploading and downloading of Excel 5 spreadsheets. But although it's Excel 5-compatible, it is not Excel 5 and does not support many of that application's advanced capabilities.

Apple's Internet Connection Kit is preinstalled on the MessagePad 2000, which makes setup for Internet communications a snap. The EnRoute i-net e-mail client software is integrated into the Newton's in/out box. Customizable features include the ability to receive only a limited number of messages at a time (to save memory and battery life), to download only messages under a certain size, and to schedule communication sessions.

Scheduling e-mail can automatically activate the Newton at, say, 5 A.M., so all your mail is ready for you to read with your morning coffee. The bundled Web browser, NetHopper 3.0, supports image downloading and automatic image resizing to the 2000's smaller-than-a-desktop screen.

Torture Test

We used the 2000 for nearly a month. During that time, we were completely sans PowerBooks and instead tried to manage exclusively with the MessagePad.

At conferences and meetings, we scrawled notes into the Notepad, where handwriting recognition worked quite well. This is one area in which the 162-MHz StrongARM really shines — handwriting recognition is quick and accurate.

Digital sound recording also worked well for these meetings; even

The Competition / Pilot and Windows CE-based palmtops

ALTHOUGH THE MESSAGEPAD 2000 will no doubt supplant portable computers in many situations, the products this new Newton must beat to be successful are not PowerBooks but the U.S. Robotics Pilot and Microsoft Windows CE-based palmtops.

U.S. Robotics Pilot. What's so great about the Pilot? It's tiny — 4.7 x 3.2 x .7 inches and under 6 ounces — and it runs for months on two AAA batteries. It has no keyboard or handwriting recognition, instead relying on a small on-screen keyboard or its proprietary glyph alphabet, called Graffiti, for input. Learning Graffiti takes practice and patience. Once you've learned the special character strokes, it offers an accurate way to input characters with a pen.

The Pilot's basic PIM applications are fast and simple. And the Pilot includes a desktop docking station that has a single button for starting file synchronization with your Mac or PC. Although this is nice, the new auto-docking capability in the 2000 works just as well, if not better. The latter allows you to back up your Newton and/or perform calendar, to-do-item, and contact-information synchronization automatically.

As to how the 2000 stacks up

against the Pilot, it's not really a fair comparison: The Pilot is a basic PIM you can carry in your pocket that has no communications or document-creation capabilities. The 2000, on the other hand, can do most things a portable computer can do. If all you need is what a Pilot does, then a 2000 would be overkill.

Windows CE-Based Palmtops.

Think of Windows CE as Windows 95 Lite — it looks like Windows and acts like Windows. And, whether you're a fan of the Windows 95 interface or not, the look and feel does not scale well to a palmtop's tiny screen.

Although its interface may be as

wooden as some United States vice presidents we know of, Windows CE does deliver when it comes to productivity applications. Pocket Word and Pocket Excel, although limited in their abilities, let you view files from their desktop PC counterparts. And thanks to the momentum created by Microsoft's ability to promote licensing, Windows CE-based hardware will be available in many shapes, sizes, and price ranges from such vendors as Casio, Hewlett-Packard, NEC, and Philips. Windows CE-based palmtops each typically include a chiclet-style keyboard and a pen that functions like a mouse, but they are missing

at a compression of 2K per second, the lowest quality setting, recordings were intelligible. And because the Newton's operating system supports multitasking, we were able to work with other Newton apps while recording churned away in the background.

We used the spreadsheet program for personal cash-flow management, migrating what used to be an Excel 5 spreadsheet on a desktop computer to QuickFigure Pro. In its horizontal orientation, the 2000's screen displayed only 7 columns by 13 rows, which made it difficult to work with large spreadsheets. The addition of a split-screen view would be helpful.

For text-based e-mail — or sharing of information among MessagePads — EnRoute i-net worked extremely well. Web access was also surprisingly good, as long as we could do without multimedia, color, or frames and didn't mind poky redownloads of images when we navigated graphics-heavy sites. (The Newton's limited memory necessitates very small page caches.) Luckily, NetHopper lets you turn off image downloading, which makes Web browsing downright snappy. Also, the browser can selectively lock pages in cache memory — particularly useful with forms-based Web sites — allowing you to download the forms you need, complete them off-line, and then upload them when you next connect.

The multitasking Newton OS really pays off when you're accessing the Internet, as we found out when a previously scheduled e-mail communication session started up during the middle of a browsing session. Very cool.

The 2000 uses four AA alkaline batteries or a rechargeable nickel-metal-hydrate battery pack that can be charged inside the unit in under an hour. Battery life varied greatly, depending on how we used the MessagePad. We found that heavy use of a PC Card modem drained the batteries very quickly, within hours. We recommend connecting the optional AC adapter when using the modem for prolonged surfing. The backlighting, however, is quite power-thrifty. Even when scribbling notes with backlighting on during a multiday conference, we got several days' use before we had to replace the batteries.

With everyday use — checking e-mail a few times a day and syncing files with a desktop machine twice a day, plus periodically checking the calendar and doing some note taking and word processing — battery life was anywhere from one to two weeks, certainly less than Apple's claim of three to six weeks but more than acceptable.

handwriting recognition of any kind.

Of course, none of this does you any good if you have a Mac. Currently, no Windows CE connection software is available for the Mac.

A Windows CE-based device is functionally more comparable to the MessagePad 2000 than to the Pilot. However, as is often true of Microsoft's first attempts, Windows CE leaves a lot to be desired. We can't say enough about how elegant and easy to use the Newton is, especially when compared with Windows CE devices. You just can't beat Intelligent Assistance for making personal-information management simple. Setting a lunch

date or remembering to call someone is as easy as writing "lunch with Bob" or "remember to call Sue" and tapping the Assist button. And the Newton interface fits beautifully on the small screen, something Windows CE is never going to do as long as Microsoft stays dogmatically devoted to the Windows 95 interface.

And then there's reliability. As it turns out, the MessagePad 2000 is the most reliable product in the entire palmtop category. And ironically enough, it's Windows CE-based devices that are currently plagued by bugs, including a data-loss problem on the Casio version of the PDA.

The Newton and the Internet

IF YOU'RE EXPECTING a Newton's Internet capabilities to be every bit as good as a PowerBook's, forget it. If, however, you want to keep in touch via e-mail or surf the Web for news, stock quotes, and the like, you'll be pleased with the MessagePad 2000's bundled Internet applications.

AllPen's NetHopper, the 2000's Web browser, supports GIF-image downloading, displaying images in 16 shades of gray and optionally scaling them to fit on the MessagePad's screen. There's no support for multimedia, nor is there support for Java — yet. At press time, Apple claimed to be "definitely looking at Java" for the Newton. Because NetHopper supports HTML up to version 2.0, frames and client-side image maps aren't supported. However, NetHopper does let you selectively lock Web pages and forms in cache memory and access them after you've disconnected.

Netstrategy Software's EnRoute i-net e-mail client software supports Internet enclosures but only those the Newton can use. So, if you want to receive a spreadsheet from a coworker, the coworker will first have to download that spreadsheet to another MessagePad with QF Exchange and mail it to you from his or her Newton.

	MessagePad 2000	PowerBook*
E-mail enclosures	●	●
E-mail links within Web pages	●	●
Web graphics	GIF images only, displayed in grayscale; no backgrounds	color GIF, JPEG images; backgrounds; color text
Frames		●
Multimedia		●
Java		●
Forms	●	●
Pop-up menus	●	●
Image maps	●	●

*With e-mail and Web browser installed.

†Server-side only.

One major advantage the MessagePad 2000 has over any portable we've used is ruggedness. We dropped our 2000 several times on hard cement with nary a scratch. Try that with a PowerBook.

The Bottom Line

Although pricey and a bit big for a PDA, the Newton MessagePad 2000 delivers first-rate performance with a full set of applications. The PIM functionality is excellent, and the synchronization software works well. The 2000 is a lightweight, less expensive alternative to a PowerBook for handling e-mail, taking notes, recording meetings, faxing, working with spreadsheets, and doing basic word processing. But some work needs to be done to improve the robustness of Web access.

As the first of a new generation of fast, capable Newtons, the MessagePad 2000 is also the first Newton we can, with a clear conscience, recommend to our friends. It proved good enough to replace a PowerBook in many instances. Basically, if you don't need to make a presentation, don't have to run a Mac application such as Photoshop, and don't mind playing games in 16 shades of gray, the 2000 is more than sufficient to fill your mobile-computing needs.

A word to the wise: If you're a current MessagePad owner, don't try out a MessagePad 2000 unless you're ready to shell out 1,000 clams on the spot. Once you've tried this thing, you won't want to go back to your old Newton. ☞

Jeff Pittelkau is director of MacUser Labs.

Work with the other guy.

We can. They can't. Apple® Macintosh computers can read and write Windows files. Add a PC compatibility card, and you can run Windows applications too. But don't ask a PC to run the Mac OS.

Get the new guy on the network faster than you can eat your bagel.

With high-speed Ethernet, TCP/IP and AppleTalk® protocols built in, the Power Mac® 8600 makes it a snap to connect to networks. (Hey, you have some cream cheese on your lip.)

Get published.

No other computer makes it easier or faster to create and output mechanicals or layouts than a Macintosh. Funny, you almost never hear about anyone creating a mechanical on a PC.

Show your true colors.

Without turning red. With built-in Apple ColorSync® you get consistent color from scanner to monitor to printer, so the color you see on the screen is the color you get on the page.

Spin your own web.

You know, the kind with animation, sound, full-motion video and 3-D graphics. With built-in QuickTime Media Layer (it includes QuickTime, QuickTime VR and QuickDraw® 3D), you can create your own award-winning web site.

Expand your computer to be much, much more. With built-in technology like SCSI and the Apple Desktop Bus, you can connect to hard disks, scanners and trackballs in seconds. No .DLL files needed here. Better yet, it's the only computer that makes it easy to connect to multiple monitors.

Become the next Hollywood mogul. Video in/out ports let you plug a video camera or a VCR directly into the Power Mac 8600—so you can edit and create QuickTime movies and send it all to tape. Technology like that will surely impress the kids. Not to mention your boss.

Save your ideas in a zip.

(No pun intended.) A built-in Iomega® Zip® drive (it's standard on the Power Macintosh® 8600, a snap to add to any other Mac) lets you take your ideas with you or send them far, far away. That brilliant idea will be long gone by the time you connect a drive to a PC.

Create a new world.

In less than seven days, of course. A 200 MHz PowerPC® 604e microprocessor, high-speed bus and accelerated video card give you the blistering speed to render, rotate, edit and manipulate images in seconds. With speed like that, no wonder BYTE said that "a high-end Mac still beats an MMX Pentium."¹

Throw away the screwdriver.

If you want to add memory and expansion cards, you'll find that a new binged-side design makes it, well, a cinch to access the motherboard and all the drives.

Count on the future.

Our enhancements to the Mac OS will take you well into the future—so the Mac you buy today won't be obsolete tomorrow. Whatever you do, don't throw away your past files and applications. They'll run, too.

Save time. Energy. Sanity.

Use AppleScript® to automate a whole slew of tasks. Like layout processes. Running multiple applications (they'll do their thing even if you're not around). Sorting e-mail. Downloading files and more. Suddenly, life just got easier.

Power Macintosh 8600

Warning: Don't try doing any of these things on a Windows PC.

See those things above? They're easy to do on a Mac. Try doing them on a Windows® PC, however, and they're not so easy. Unless, of course, you think it's easy to find extra time. And extra money. You see, a Mac comes with all the perfectly integrated hardware and system software you'll need to do what you want to do. So, right out of the box you'll be exploring the Net,² creating movies and connecting to networks, CD-ROM drives, hard drives and more. Not so with a Windows PC on your desk. Why? Because even if your PC has all the adapter cards and drivers you need (not all of them do),

you may have to spend precious time learning about .DLL files and IRQ settings. And if you want to create multimedia that really moves, you'll have to add even more—most Windows PCs don't come with QuickTime®. No wonder the Mac is rated higher than Windows in ease of use, productivity and overall satisfaction.³ And that Macintosh[®] is used to create 64% of all sites on the World Wide Web.⁴ So, in case you find yourself thinking about buying a Windows PC, think again. You could be in for a shock. To learn more, visit us at www.apple.com.



DESKTOPmedia

Experimenting with digital cameras? These three Photoshop tricks will help you make the most out of your images.



By Bruce Fraser

Photo Fixes

THEY'RE FUN, CONVENIENT, and becoming too affordable to resist — but digital cameras aren't exactly like their analog cousins when it comes to the images they produce. Even if you're an old hand at touching up scanned-in photos or Kodak Photo CD images, you'll find that images produced by digital cameras have their own peculiar quirks, problems you'll rarely encounter in images from other sources.

Three common flaws in digital-camera images are color artifacts, high-contrast blurriness, and stubborn jaggies. The techniques that follow (which we performed in Photoshop 4.0; most or all of the steps should work in version 3.x as well) will not only help you rescue images from these flaws but will also give you practice using some lesser-known Photoshop features that can be invaluable additions to your arsenal of image-enhancing tricks.

TRICK #1:

NEUTRALIZING COLOR ARTIFACTS

THE IMAGE IN FIGURE 1 was captured with a Kodak Digital Science Professional DCS 410 digital camera, and it shows a problem we encounter fairly often in images from all the Kodak DCS cameras: yellow and blue artifacts that crop up in areas of fine detail. You can often eliminate them by moving the camera or changing the focus slightly, but unless you're viewing your images on a PowerBook in the field, you won't know the artifacts are there. Fortunately, you can tame them quite effectively by using the following technique.

The trick consists of separating the color information from the luminance information by converting the image to Lab color mode. Lab uses a single channel, Lightness, to store all the luminance information and keeps all the color information in the two remaining channels, *a* and *b*. By blurring the



FIGURE 1 / BEFORE, DETAIL

This image shows unnatural yellow and blue artifacts in some areas, such as the second-story railing on the right.



FIGURE 1 / AFTER, DETAIL

By using Trick #1 to isolate and blur the color information, we can greatly reduce the artifacts in the final image.

color channels and sharpening the Lightness channel, we can make the artifacts nearly invisible.

STEP 1a:

Convert to Lab color.

When you're new to this technique, it's a good idea to create a copy of the image (Image: Duplicate) and work on the copy. Once you convert it to Lab color (Image: Mode: Lab Color) and examine the separate channels (clicking in the eye column next to each channel in the Channels palette to show or hide that channel), you'll find that the artifacts are very obvious in the *b* channel, somewhat less so in the *a* channel, and almost invisible in the Lightness channel.

STEP 1b:

Blur the *a* and *b* channels.

The next step is to blur the *a* and *b* channels to reduce the visibility of the artifacts. We use the Dust & Scratches filter, because it offers maximum control over the blurring.

Start with the worst channel, the *b* channel. Select the *b* channel in the Channels palette (highlight it by clicking on its name) to make it the target channel, and then click in the eye column next to the Lab channel to make the composite (Lab) channel visible. That way, you'll filter only the *b* channel but you'll see the effect on the overall color image. Experiment by selecting a small area of the image, so that you can see the results of different settings quickly.

Next, apply the Dust & Scratches filter (Filter: Noise: Dust & Scratches) to the *b* channel. The settings for the filter depend partly on the content of the image and partly on your own taste. In general, you need to apply heavier settings to the *b* channel than to the *a* channel. For this image, a radius of 16 and a threshold of 10 work well; these are also good starting points for most images. Once you've found

the right settings, click on OK to apply the filter to the small area you selected and then immediately undo the action (Edit: Undo), deselect the small area, and launch the filter again to apply it to the entire channel.

Filtering the *b* channel has a huge impact on the saturation of the artifacts, but we can reduce their visibility further by repeating the filtering process on the *a* channel. Select the *a* channel in the Channels palette while keeping the Lab channel visible. For this image, we wound up using a radius of 6 and a threshold of 12 for the *a* channel.

STEP 1c:

Sharpen the Lightness channel.

The last step is to sharpen the Lightness channel, using the Unsharp Mask filter (Filter: Sharpen: Unsharp Mask), to counteract the added blurriness in the other channels and to provide the extra sharpening that would be needed in any case. Select the Lightness channel in the Channels palette, keeping the Lab channel visible as before, and then apply the filter. We generally set the amount at around 200 percent and the radius at between 0.3 and 0.7 pixels, and then we bring up the Threshold setting as needed to control the noise. For this image, we used an amount of 200, a radius of 0.3, and a threshold of 7 to achieve a pleasing final result. You can then convert the fixed image back to RGB or go straight to CMYK for printing.

TRICK #2:

SHARPENING SOFT, HIGH-CONTRAST IMAGES

SOME DIGITAL-CAMERA VENDORS have designed their cameras so that optical filtering takes place to prevent color artifacts from appearing. This filtering creates a trade-off: Images typically appear quite

soft overall, but all the high-contrast edges are sharp, as in our example image taken with a Nikon E2s. If we simply run the Unsharp Mask filter on the whole image, the high-contrast edges become *too* sharp (see figure 2 / Before, Sharpened Detail). We need to build a mask that will protect the high-contrast edges while allowing us to sharpen the rest of the image.

We can do this by creating a channel that exaggerates the contrast of the edges, running the Find Edges filter on the channel, and then using the channel as a mask through which we sharpen the image. This way, we can introduce enough sharpness to bring out the textures in the image without exaggerating the edges.

STEP 2a:

Create a high-contrast channel.

In some images, you may be able to simply duplicate one of the existing channels to create the high-contrast channel you need, but in cases such as the one shown here, you'll have to work a little harder, using the Calculations command (Image: Calculations) to blend and emphasize the information from one or more channels. We always use the Multiply blending mode in our calculation to increase contrast, but the channels we multiply vary from image to image. Often, when working in RGB color mode, we multiply the red and green channels together, but in this case, we multiplied the green channel by itself to emphasize the information in that channel. That is, we set both the Source 1 and the Source 2 channels to green (with Multiply as the Blending option and the Preview option checked) and put the result into a new channel, #4.

STEP 2b:

Isolate the edges.

Next, we ran the Find Edges filter (Filter: Stylize: Find



FIGURE 2 / BEFORE

This soft-looking image needs sharpening — but its high-contrast edges *shouldn't* be made sharper.



FIGURE 2 / BEFORE, SHARPENED DETAIL

If we sharpen the image immediately, the high-contrast edges become too sharp, as this detail shows.



FIGURE 2 / AFTER, DETAIL

By employing Trick #2 to protect the edges during sharpening, we create a final image without exaggerated edges.

power hungry professionals

Robert Dietz

Principal, Dietz Design, Seattle, WA

Clients:

Adobe, Adobe Magazine, MSN, Nordstrom,

PhotoDisc, Union Bay Sportswear,

Addison-Wesley Publishing, Luminous.

Systems:

Power Computing Power Center, 150,

Apple Power PC 8100/80 AD/AV, Power/Mac 7200/120,

TwinTurbo 128 M8, and as much

RAM as we can get.



1996 MacUser Editor's Choice
Award Finalist—TwinTurbo 128M8

"No matter how much we invest in equipment it seems like we're always needing more power. And more speed. Because clients demand fast turn-around, and I'm striving to do breakthrough creative in new media. Which means working in programs like Photoshop™ and Director™. So we've installed the TwinTurbo 128 in every machine possible. That way, when we need to move an outrageous high-end image fast, we can."

Photo realistic image quality from 640x480 to 1920x1080. 180 Mbyte/sec image scroll rate. And the ability to move 24-bit images in real-time. Plus QuickTime compatible acceleration for true-color, full-screen, real-time video playback at 30 fps. Available with 2, 4 or 8 Mb of VRAM.

RELY ON TWINTURBO 128

The Award-Winning TwinTurbo 128 Series of Multimedia Accelerators for Macintosh.

TWINTURBO
1 2 8 M

CIRCLE 43 ON READER SERVICE CARD

Keep pace with the leaders.

Call 1-888-IMS-8282 today or visit our

Website: www.integratedmicro.com.




FIGURE 3 / BEFORE

This image needs sharpening, but it also has jaggies — which we *don't* want any sharper.

Edges) to isolate the edges. We could have simply used the result of this filtering as our mask, but the result tends to be too heavy, protecting too much of the image. Instead, we used the Calculations command (Image: Calculations) again to reduce the intensity of the mask. We used channel #4 for both our sources, set the blending to Screen (the opposite of Multiply — this makes the result *lighter*), and put the result into channel #4. On some images, we lessened the intensity of the mask still further by repeating the calculation.

STEP 2c:

Use the found edges as a mask to sharpen the image.

Once the mask is created, switch back to the composite channel (RGB, in this case), by selecting it (clicking on the channel name to highlight it) in the Channels palette. Then load the newly created channel #4 to act as a mask in the upcoming filtering operation (Select: Load Selection); be sure to check the Invert option in the dialog box so that the edges are masked. Next, run the Unsharp Mask filter (Filter: Sharpen: Unsharp Mask), experimenting with the settings on a selected area if needed. On this image, we used fairly extreme settings: amount, 350; radius, 0.7; threshold, 0. Once you've done this, you can discard channel #4 (by selecting it in the Channels palette and dragging it to the palette's Trash), since you'll no longer need it.

When we compared the result with the raw image in our example, looking at a close-up of a small area, we saw that we'd brought out the textures without creating any unnatural-looking extra sharpness.

TRICK #3:

SUPPRESSING JAGGIES WITHOUT LOSING SHARPNESS

DIGITAL-CAMERA IMAGES are particularly prone to the problem of aliasing, or *jaggies* — jagged edges in which pixelation is clearly visible. Our example (see


FIGURE 3 / BEFORE, SHARPENED DETAIL

If we sharpen the image immediately, the jaggies stand out strongly.

figure 3), taken with a Polaroid PDC-2000, isn't too bad: The aliasing becomes really prominent only after we've sharpened the image. But since the image *did* need sharpening, we had to develop a trick to help us obtain a decent degree of sharpness while suppressing most of the jaggies.

As in Trick #1, we convert the image to Lab color to separate the luminance information from the color information. But here we blur the *Lightness* channel (since that's where the jaggies lie) — enlarging the image beforehand and downsampling it afterward — instead of the color channels.

STEP 3a:

Convert to Lab color.

First, convert the image to Lab color (Image: Mode: Lab Color). You'll find that the jaggies stand out strongly in the Lightness channel.

STEP 3b:

Enlarge, blur, and downsample the image.

How you perform this next step depends partly on how much RAM you have. If you have *plenty* of RAM, you can work with the entire image; more likely, though, you'll want to duplicate the Lightness channel into a new document before proceeding. To do so, click on the Lightness channel in the Channels palette to select it and then choose Duplicate Channel from the Channels palette's pop-up menu. Set the Destination Document to New — you can leave the other settings in the dialog box blank.

Working on the new document (or on the original image with the Lightness channel selected), enlarge the image (Image: Image Size), using the following specifications: Set the width to 400 percent, and make sure that the Constrain Proportions and Resample Image boxes are both checked (you don't need to set the pixel height if Constrain Proportions is on) and that bicubic resampling is selected. Because this will increase the file size dramatically, the next few steps may go slowly.

Next, blur the image as follows: Choose the Median filter (Filter: Noise: Median), set the radius to 5


FIGURE 3 / AFTER, DETAIL

By employing Trick #3 to blur the luminance info before doing the sharpening, we can reduce the jaggies in the final image.

pixels, and click on OK. Once the filter has run, go back to Image Size (Image: Image Size), set the width to 25 percent (leaving all the other settings as they were), and click on OK.

STEP 3c:

Sharpen the image.

Next, sharpen the image (Filter: Sharpen: Unsharp Mask). The ideal settings to use here vary, but as a general rule, a fairly high amount and a low radius work well. In this case, we set the amount to 250, the radius to 0.6, and the threshold to 0.

If you chose the RAM-efficient method of performing this trick, you have one more step to do: replacing the Lightness channel in the original document with the one you've processed. Select the entire document (Select: All), and copy it (Edit: Copy). Then go to the original document, select the Lightness channel in the Channels palette, and paste in the copied channel (Edit: Paste).

The resulting image will be adequately sharp but will have far fewer jaggies than one sharpened without the intervening steps.

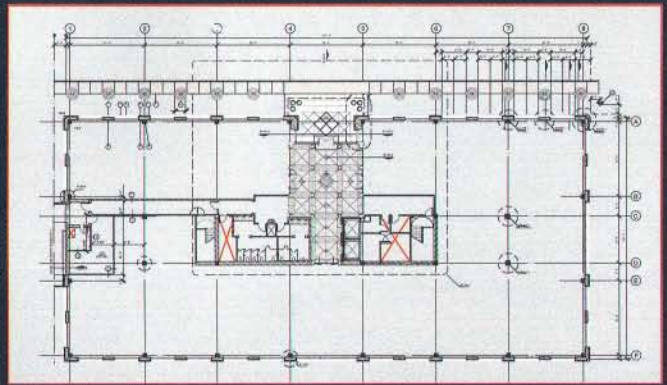
End of Roll

The images we fixed here were all produced by midrange digital cameras (between \$3,000 and \$7,000 in price). However, the techniques (which we've automated to a large degree in a set of Photoshop actions available at <http://www.macuser.com/0697.html#photo>) apply to lower-end digital cameras as well.

With images from such cameras, you may find that you have to use higher values in some of the settings and that the results won't be as dazzling as those you can achieve with images from midrange cameras — but if you experiment, you'll be surprised at how much you can do with images that seemed irretrievably flawed. 

Bruce Fraser is a MacUser contributing editor and the coauthor of *Real World Photoshop 4.0* (Peachpit Press).

The Easiest, Most Cost-Effective



Way to Design

—Audience Vote at the Designers CAD Shoot-Out

The general-purpose MiniCad went toe-to-toe against industry-specific CAD programs nearly six times as expensive—and

came out on top—at the first-ever Designers CAD Shoot-Out for Architectural CADD Systems. In this advent of “architecture as a spectator sport,” the audience at Boston’s World Trade Center awarded MiniCad 6, fittingly, six first-place awards:

- Most Cost Effective
- Easiest to Use
- Best at Cross-Platform Operation
- Best Floor Plans
- Best Elevations
- Best Sections

MiniCad also placed a close third in the Overall Winner category (garnering 21% of the audience vote compared to Arris’ 25% and ArchiCad’s 24%), beating out AutoArchitect, Microstation Triforma, AllPlan, Architrion, and DataCAD. Even more impressive: MiniCad was the only software program running on both a Macintosh and a Windows machine during the event. This recent success is not surprising. For years MiniCad has been the top-selling CAD program on the Macintosh, winning industry

awards worldwide. And the reviews for the recently released Windows version have all been emphatic.

To find out more about the CAD Shoot-Out or how professionals in more than 80 countries have used MiniCad—designing everything from a guitar to a zero-gravity manufacturing device; building houses, luxury high rises, shopping centers, and hockey arenas; planning the stage set and lighting for worldwide Metallica tours; even helping reconstruct Shakespeare’s historic Globe Theatre—check out our web page (www.diehlgraphsoft.com) or call 1-800-694-7318.

MiniCad has a suggested retail price of \$795, and it comes with 18 months of free tech support and a 30-day money-back guarantee from participating dealers. MiniCad 6 supports Windows 95, NT, 3.1, and Macintosh OS.

Diehl Graphsoft Inc
Software for Today’s CAD Professional

MiniCad is a trademark of Diehl Graphsoft, Inc.
All other brands and product names are trademarks of their respective holders.
Above building designed by David A. Bruhnke, Herring & Trowbridge Architects.

CIRCLE 10 ON READER SERVICE CARD

MiniCad 6 —The only thing small is the price.

Multiple Undos in Photoshop

Impossible? Not quite. Here's how to fix almost all of your graphics goofs.

YOU CAN ALMOST HEAR THE WORDS echoing from frustrated Photoshop users worldwide: "Why is there only one level of undo?!" Until Adobe rewrites Photoshop to let us fix mistakes by pressing Command-Z several times, as we can in other programs, a few slips of the mouse will continue to endanger hours of work. However, there are ways around this limitation. By using some of Photoshop's features with a little creativity, you *can* backtrack through more than one of your editing steps and save time.

The beauty of such an approach is that it gives you more control than a regular Command-Z undo would. In programs such as Adobe Illustrator, you can undo steps only in the reverse of the order in which they were performed, erasing everything you did in between. With the following techniques, you can undo a *part* of your editing. And have

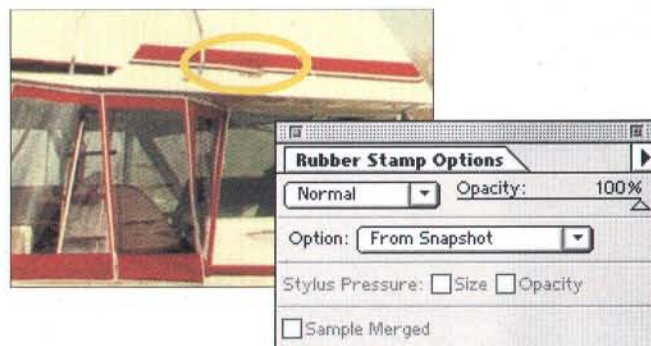
you ever heard of undoing something after you've saved the file? With some of these methods, you can do just that. Be forewarned, however, that you'll need to increase Photoshop's RAM allocation in order to utilize most of these techniques.

Follow along as we demonstrate ways to squeeze more flexibility out of Photoshop. If you haven't upgraded to Photoshop 4.0 yet, don't be discouraged. All these tips, with the exception of number 5, will work for you, although some of the menu commands may be slightly different. Even if you use only one or two of these techniques, you will have won a victory in the battle for multiple undos.

Chris Lehan is an electronic-prepress manager for a printing company and also teaches classes on Adobe Photoshop and the Internet for a technical college in Minneapolis, Minnesota.



1. USE THE RUBBER-STAMP TOOL OR THE ERASER TO REVERT A PIECE OF YOUR IMAGE.



2. SAVE A SNAPSHOT TO SAFEGUARD YOUR EDITS.

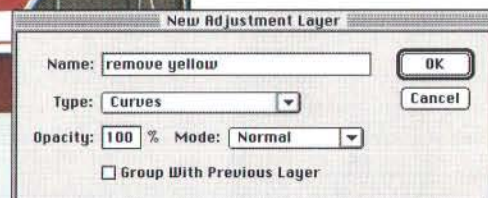
STEP BY STEP

1. USE THE RUBBER-STAMP TOOL OR THE ERASER TO REVERT A PIECE OF YOUR IMAGE. If you make a mistake as you begin editing, choose the From Saved option from the Rubber Stamp Options or Eraser Options palette (Window: Show Options) and restore the place you messed up to its original state with the tool. We didn't like all our results after we removed scratches from the boat's windows, but instead of reverting to the saved version of the whole image (File: Revert) and starting over, we used the rubber stamp's From Saved option to undo a *part* of our editing.

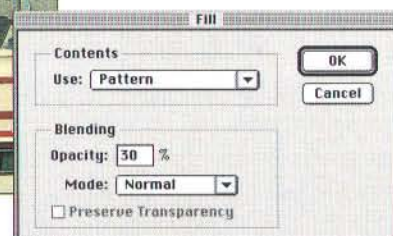
2. SAVE A SNAPSHOT TO SAFEGUARD YOUR EDITS. As you complete complicated tasks, you may want to take a snapshot (Edit: Take Snapshot) to save what you've done to a buffer in RAM. The snapshot remains safe until you save or close the image, take another snapshot, or purge it (Edit: Purge: Snapshot). We took a snapshot before beginning to remove the pole. This allowed us to restore the top of the boat when we messed up,

by using the From Snapshot option on the Rubber Stamp Options palette and painting over the mistake with the rubber-stamp tool. If we'd reverted to the original image, we would have lost *all* our editing, and if we'd used the From Saved option, we would have restored the scratches that intersected the pole. You can also use a snapshot to restore an entire image, or a selection, by using the Fill command (Edit: Fill) and choosing Snapshot from the contents pop-up menu.

3. PROTECT YOUR EDITS TEMPORARILY ON THE CLIPBOARD. Another way to protect your editing is to select the image (Select: Select All) and copy it to the Clipboard (Edit: Copy). If you make a mistake, you can paste any part of this version into a selection area (Edit: Paste Into) and the selection will drop by default into a new layer. However, be careful not to erase the older version by copying anything else! The version will remain if you save or close the image but not if you copy something or purge the



5. TAKE ADVANTAGE OF PHOTOSHOP 4.0'S ADJUSTMENT LAYERS.



3. PROTECT YOUR EDITS TEMPORARILY ON THE CLIPBOARD.

4. USE PATTERN FEATURES TO RESTORE AN OLDER IMAGE VERSION.

Clipboard (Edit: Purge: Clipboard). After we removed the pole, we copied the image to the Clipboard. Later, when the boat's windows looked overlightened, we selected the windows with the marquee tool and pasted into the selection area from the Clipboard. The old windows appeared on a new layer, so we could adjust their opacity precisely.

4. USE PATTERN FEATURES TO RESTORE AN OLDER IMAGE VERSION.

Ordinarily, you'd use Photoshop's Define Pattern command (Edit: Define Pattern) to turn a piece of an image into a repeating pattern, but you can also define an *entire image* as a pattern. A pattern remains safe even after the image is saved and closed, although not after you quit Photoshop, define a new pattern, or purge the pattern. Before we applied Unsharp Mask, we selected the image (Select: Select All) and defined it as a pattern (Edit: Define Pattern). As a result, we didn't panic a few steps later when we realized we'd oversharpened. We were able to select the

oversharpened image (Select: Select All) and fill (Edit: Fill) with the old version by choosing Pattern from the Contents menu. We then softened the sharpening precisely by choosing a blending opacity of 30 percent.

5. TAKE ADVANTAGE OF PHOTOSHOP 4.0'S ADJUSTMENT LAYERS. You may have read about adjustment layers, but you may not have realized that they're an undo bonanza. Now you can experiment with tonal and color corrections — all the adjustments, from curves to color balance, that once lived on the Image: Adjust menu — without directly altering a single pixel. None of your changes are permanent until you flatten your image; if you don't like what you've done, you can delete the adjustment layer. Our final editing step called for removing a yellow cast from our photograph. We created an adjustment layer (Layer: New: Adjustment Layer), chose Color Balance from the Type pop-up menu, and adjusted the sliders fearlessly until we liked what we saw.

Changing Gracefully

Can we introduce change into our DTP environment without falling on our keisters every time?

WE'RE CHANGING so awkwardly these days. Every time a technology changes, the way we use it also has to change. But in the process, our old workflow often becomes our new situational "failure," which we must then address. The danger of meddling with workflow, however, is that to remove any element in our DTP house of cards is to risk collapsing the entire structure. Wouldn't it be nice to confine damage to the upper stories?

Now that the dust is settling from the "Which OS will it be?" frenzy, there are still basic issues we must grapple with, regardless of which OS sits at the root level of our hard disks. Namely, how do we put all this technology together to be productive? What kind of workflow can we cobble together to make money with whatever system we wire up?

The Internet, print, CD-ROM, WebTV — today there are a host of pipelines delivering content. Production for each of these media will have you wiring different pieces of equipment together, but the hardest connections aren't the ones you make with wires or SCSI cables. To manage production, you also need to be able to make connections among the different parts of your process. Each medium requires its own MO (*modus operandi*, not *magneto-optical*), and if you don't know how the parts of the process connect, then you're going to have a difficult time keeping production alive when you implement change.

Missing the Big Picture

For example, if we're printing a book, we might ask ourselves the question, What details need to be revealed in digital page proofs? To find the answer, we've tweaked new tools and tried to understand color gamut, RGB-to-CMYK conversion, black-ink generation, and so on. What's wrong with this approach? Nothing, except that it isolates the proof from other important parts of the workflow. We talk a lot about color management, but we talk very little about ink management. Even if the colors look great, if ink is printed in the wrong

part of the gutter of a book (the part of the spine where the binding is done), then the binding glue won't adhere properly. We have preflight software that tells us if there are Pantone colors where there should be CMYK, but we don't have a preflight strategy that also takes into account the binding machines. If we isolate digital-proofing particulars from the rest of the manufacturing process, we're

occurring even more rapidly than technological evolution itself. How to deal with it all? To begin with, we need to keep up not only with new technology but also with how it's affecting the problem areas we must address. We must understand all parts of the workflow continuum, not just the part we're directly involved in. Managers who don't get involved in the details leave themselves vulnerable. You

can't connect the dots properly if you don't even know where the dots are.

Workers also need to receive training that helps them see their connection to parts of the workflow that may be far upstream or downstream from their workstations. These days, we tend to give them only what they need in order to get their job done. "Provide training!" is a time-honored battle cry, but it's mostly ignored, because some employers don't completely buy into the notion that more and more training always increases efficiency.

merely pushing our problems down the assembly line.

Here's another example from the design world. Remember typography — the long-lost art of making text not only look right but also *feel* right? When we finally get into the business of serving clients who want to repurpose their content, we're going to have to put typography back into the workflow. Case in point: In the print world, it's currently the vogue to space letters tightly, but text on a television screen is easier to read when there's *extra* space between characters. How are service providers faced with repurposing content from the page to the screen going to make that content look good if they haven't considered these differences? How are they going to enhance the repurposed content when they're dealing with part of the workflow that has never been their traditional bailiwick?

Workflow changes have probably been

Finally, we need to reintroduce the concept of accountability into the process. After years of using self-contained systems, we've forgotten that we can ask people to remember that their tasks should connect through the entire process. Establishing connections requires managers who have the vision and strength to look beyond the immediate bottom line and who take time to integrate strategic planning, technology implementation, and day-to-day operations. By planning for a future in which the workflow — the process itself — is flexible, we give ourselves a chance to change a lot more gracefully than we do now. Who knows, maybe we can keep the house of cards from collapsing at all. 

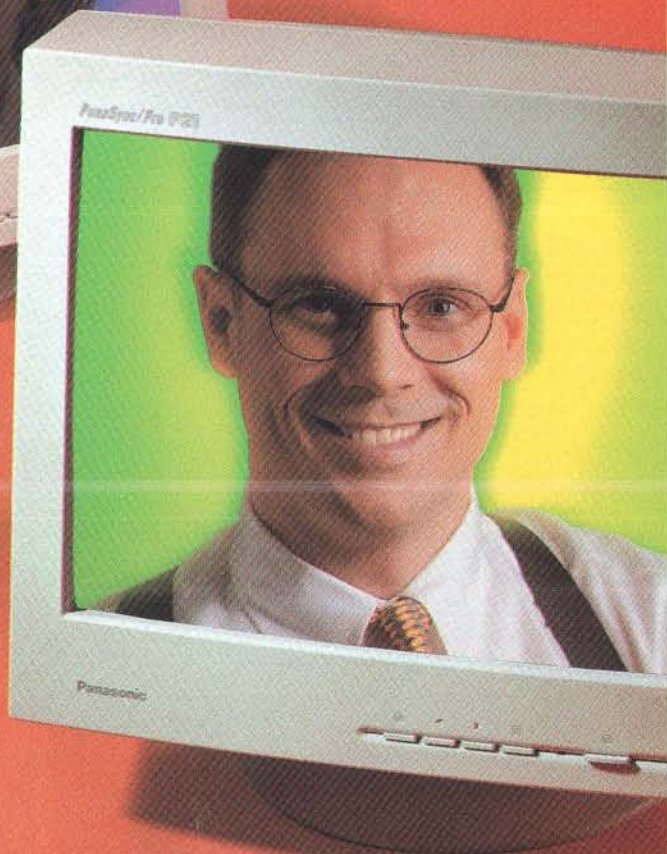
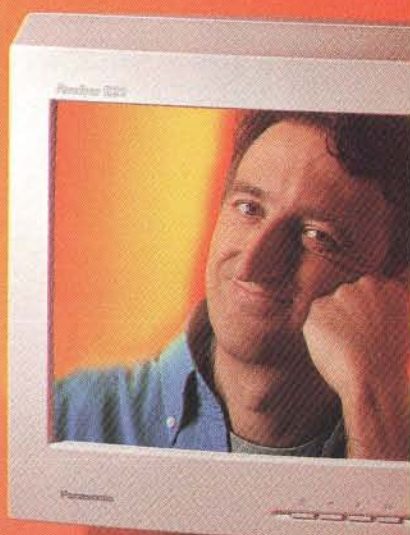
Bob Schaffel is emerging-technologies consultant for R. R. Donnelley & Sons. Chuck Weger is a graphic-arts consultant and a partner in Genex Media, a company specializing in new media and Web design. Write to them at experttips@macuser.com.



PanaSync™ **E21**



PanaSync™ **S21**



PanaSync/Pro™ **P21**

what's on your **MIND?**

Are you thinking about sharp, vivid, exceptional picture quality? A great value and solid support program? A monitor that will fuel your imagination?

Then you should be thinking about a Panasonic® Monitor. Like all Panasonic monitors, our 21" class will truly impress you.

Whether you're looking for an entry, standard, or professional monitor, we've got a model that will exceed your every expectation.

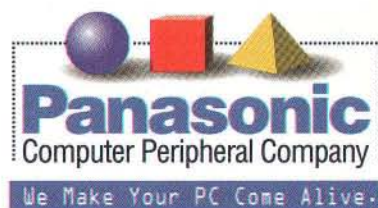
Take a look at some of our stats:

Model	E21	S21	P21
Dot Pitch (mm)	0.25	0.25	0.25
Max. Res. (H X V)	1600 X 1280	1600 X 1280	1800 X 1440
H-Scan (kHz/NI)	30 - 89	30 - 95	30 - 115
Viewable Area	20.0"	20.0"	20.0"
ESP*	\$1399	\$1499	\$1699

And when it comes to affordability, we're pretty tough to beat. *PC Magazine* said it best in December, 1996, "When you factor in price, the Panasonic PanaSync Pro P21 is the best overall choice..." And in November of 1996, *CADalyst* added, "...the PanaSync S21 sets a new price/performance standard."

We've also created the most extensive warranty and customer support program in the industry. Our 3-Year Limited Warranty on parts, labor and the CRT, 1-Year On-Site 48-Hour Exchange Program, and 24-Hour, 7-Day Customer Support Hotline add additional value you won't find from the competition.

So if award-winning quality, performance and affordability are what's on your mind, check out a Panasonic Monitor today.



1-800-742-8086 ext.MN15

www.panasonic.com/alive

CIRCLE 80 ON READER SERVICE CARD

* Estimated Street Price as of April 1, 1997

MN 15-MAC

WRITE. REWRITE. WRITE. REWRITE.

**We took a great idea right
from the end of our pencil.**



Now you can write and rewrite on CD.

The Ricoh CD-ReWritable (CD-RW) can write to a CD, then rewrite it. It's the biggest advance in computer technology since the Undo command.

The CD-Recordable (CD-R) can't be beat for permanent storage of massive information files like graphics, photos, and videos.

But now, Ricoh, a leader in imaging technology, announces the Ricoh MP6200 CD-ReWritable Series. It offers the advantages of 2X record/6X playback with a 2MB buffer (select models) for uninterrupted recording. And the Ricoh MP6200 Series not only records CD-ReWritable discs (readable by Multi-Read CD-ROM drives and DVD-ROM drives), it also records CD-Recordable (CD-R) discs, too. That keeps you ahead of the technology curve.

Go with the CD recorder that can Undo.

Go Ricoh. Call **1-800-967-UNDO** (8636).

Or visit us at **www.ricoh.com** on the Web.



RICOH®

CIRCLE 160 ON READER SERVICE CARD

NETWORKING

If your Macs
are under attack,
we can help you
fend off their critics.



By Shelly Brisbin

Macs? Not on My Network!

THE OFFICE CAN BE A BATTLE ZONE. The issue is the state of the Mac, and the weapon is myth. "Macs are expensive. They're hard to manage. They can't be integrated into a NetWare- or NT-based network." If you're a Mac manager in a PC-dominated company, chances are you've heard all these complaints. You may face IS (information systems) professionals who don't understand the Mac. Sometimes the feelings are even hostile.

We asked a few Mac veterans to tell us what myths they've confronted and what information they've used to fight and win — or at least battle to a stalemate — in a Mac-hostile environment. Here are three of the most common myths our Mac informants mentioned:

Myth 1: Macs Are Expensive

Have you priced Mac OS systems lately? Prices for 200-MHz Macintosh clones from Power Computing and Motorola, for instance, start at around \$1,700. Comparable PC clones cost around \$1,850. Macs may not always be cheaper than their PC equivalents, but their prices are competitive.

Mac competitiveness has gotten a boost recently from falling RAM and hard-drive prices. Apple's decision to use PC industry-

standard IDE drives in some of its machines also helps, since those drives tend to be less expensive than SCSI drives.

In some cases, buying a Mac is worthwhile even if it's more expensive. That's what many people in industries where having computers with fast processors is a must seem to have deduced. Macs continue to dominate in such industries as multimedia and publishing, because they're fast and offer the features necessary for doing the most-intensive work.

Myth 2: Macs Are Difficult to Configure and Manage

The network managers we interviewed who have experience with Macs as well as PCs noted that configuring a new Mac takes a matter of hours whereas configuring a PC can stretch over a day or two. Configuring a PC takes longer because it involves more steps and is more complicated. With a PC, for instance, you have to configure DLL (dynamically linked libraries) files. Also, if you need to add memory or disk drives, include the time you'll spend hunting for the tools you need for opening the machine. Then you need to set up each drive, using arcane codes and DOS commands. Installing several PCs is

likely to require the services of an experienced (and probably expensive) technician for performing the tedious installation and configuration tasks for each system.

Preparing Macs is much easier. You can usually open a Mac by undoing a single screw. Once you've got the case open, you can install memory or drives, close it up, and reboot. No driver configuration is necessary.

Working with the Mac OS is also straightforward and doesn't require specific knowledge of several configurations. All Mac OS systems arrive with the same basic system software — everything you need in order to get a new Mac onto the network is preinstalled.

Although most PC vendors ship their machines with Windows 95 installed, each company's system has its own complement of files and driver software peculiar to the machine and its peripherals. You can't just pop in a Windows 95 system disk and expect everything to work. Idiosyncratic system software might be OK if all your PCs come from the same vendor, but that's pretty unlikely in large companies.

With system software installed and hardware configured, adding your company's standard suite of software — a word processor,

spreadsheet program, and e-mail package, say — is a simple matter, right? Mac users are spoiled. Attaching an external SCSI hard drive to a new Mac and starting a Finder copy to install software on the disk is a painless process. If your installation requires adding files to the System Folder, you can use AppleScript or a software-distribution application.

Many PCs have an external SCSI port (many don't), making it easy to plug in a device, but there's no guarantee the PC will recognize your

drive without some tinkering in Windows Setup (configuration software for peripherals). All in all, deploying a Mac is quicker and — since time is money — cheaper than putting a new PC on a network.

Myth 3: AppleTalk Is Chatty

Folks accuse AppleTalk of being a "chatty" protocol (one that sends too much data over a network). Because every AppleTalk device (such as a computer or a printer) constantly

polls all the other AppleTalk devices on the network, the protocol generates a lot of packets. Theoretically, this causes traffic jams on a multiprotocol network.

AppleTalk is much less chatty than it used to be. Chances are that naysayers are basing their opinion on old software because they're not up on the latest Mac networking protocol. Several years ago, Apple introduced AARP (AppleTalk Address Resolution Protocol), software that cuts down on AppleTalk's chattiness and the packet storms that can result.

Many people who would smother AppleTalk are comparing it with the wrong protocol — NetWare's IPX. It makes more sense to compare it with TCP/IP. Many organizations that once relied exclusively on IPX for server-based communication with PCs are adding TCP/IP or moving entirely to it. The move to TCP/IP also includes lots of Macs, which no longer depend just on AppleTalk for access to e-mail and other network applications. With so many people using TCP/IP, comparing AppleTalk with IPX is silly. When you compare AppleTalk with the right protocol, this myth is turned on its head — TCP/IP is much chattier than AppleTalk and uses larger data packets too.

Debunking and Diplomacy

Fortunately, Apple and several groups of Macintosh devotees offer lots of information for Mac fans under siege. Check out Apple's Why Macintosh? Page (<http://www2.apple.com/whymac/>) for the view from Cupertino. Network managers will find company and good ideas at The AppleTalk Network Managers' Association (<http://oak.forest.net/anma/anma.html>). MacFacts (<http://www.halcyon.com/kegill/mac/welcome.html>) points out the many instances in which Macs have won in comparisons against PC systems. AppleJedi (<http://www.saracen.com/applejedi.html>) is probably the coolest "Macs are better" site. AppleJedi is a Web-based magazine, with articles for serious evangelists.

Your best bet for peaceful coexistence is patience, good information, and a little diplomacy. You can win points by carefully documenting support costs for the Macs in your office and tracking the productivity of the people lucky enough to have them on their desks. The advantages of the Mac may seem obvious to you, but nothing may speak louder to management than the bottom line. ☐

MacUser Associate Editor Shelly Brisbin once configured 20 Macs in a single day.

Half-size (7") Card
Now Available

Windows® NT 200 MHz Pentium®



WITH
OrangePC

Technical Leadership

OrangePC is the only Windows® compatibility card in the world which brings the powerful 200 MHz MMX Intel® Pentium and the multi-tasking Windows NT 4.0 operating system to the Mac.

An Orange PC for Every User Need

The OrangePC offers a complete series of expansion cards for NuBus, PCI and 7" PCI (Performa) slots. Choose your processor ranging from a low cost Intel 486 to the 200 MHz MMX Pentium powerhouse. Select your OS from Windows 95, Windows 3.1, DOS or our exclusive Windows NT. OrangePC will run any of your PC programs simultaneously with your Mac applications.

And the OrangePC is affordable with prices starting at \$499.

Choose Your OrangePC

OrangePC 340: NuBus, 486/5x86, 256KB cache, up to 64MB RAM.

OrangePC 420: 12" PCI, 486/5x86, up to 32MB RAM, 1MB video DRAM, From \$499.

OrangePC 440: 12" PCI, 486/5x86, 256KB cache, up to 64MB RAM.

OrangePC 520: 7" PCI, up to 200 MHz Pentium MMX, up to 128MB RAM, 1 or 2 MB video DRAM. From \$799.

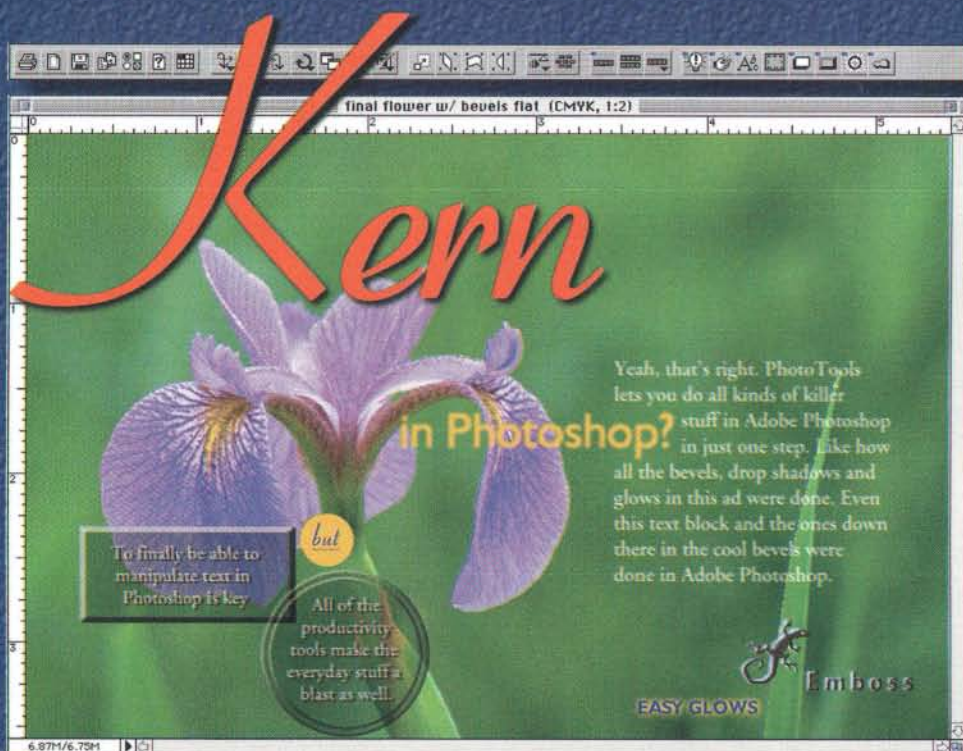
OrangePC 540: 12" PCI, up to 200 MHz Pentium MMX, 256KB cache, up to 256 MB RAM, 2 MB video DRAM. Every OrangePC comes with these ports: 2 Serial, parallel (for dongles), game, stereo Sound Blaster® In/Out.



"17 Years of Innovation and Excellence"
1400 N. Lakeview Ave., Anaheim, CA 92807
(714) 779-2772 www.orangemicro.com

CIRCLE 130 ON READER SERVICE CARD

PHOTOTOOLS MAKES PHOTOSHOP SO PRODUCTIVE YOU'LL HAVE PLENTY OF TIME LEFT TO KERN.



To finally be able to
manipulate text in
Photoshop is key

but

All of the
productivity
tools make the
everyday stuff a
blast as well.

Yeah, that's right. PhotoTools
lets you do all kinds of killer
stuff in Adobe Photoshop
in just one step. Like how
all the bevels, drop shadows and
glows in this ad were done. Even
this text block and the ones down
there in the cool bevels were
done in Adobe Photoshop.

EASY GLOWS



Emboss



QX-Tools' award-winning XTensions
for QuarkXPress lets you create effects,
control layers, resize objects, apply
styles and more. Mac.



Fetch organizes your graphics files into
an on-line browsable catalog for quick
and easy access, regardless of the
application used to create them. Mac.



CyberPress converts QuarkXPress
documents into HTML format for the
WWW. Includes the award-winning
Adobe PageMill 2.0. Mac.



PageTools' award-winning fifteen plug-
ins give you PageMaker's most-requested
features, like character styles and
scaling multiple objects. Mac & Win.



VectorTools' plug-ins for Illustrator and
Xtras for FreeHand is an indispensable
collection of tools that feature color control,
object styles, libraries and more. Mac.



Intelligence for Photoshop and
PageMaker automatically and
intelligently enhances the quality of
single or multiple images. Mac & Win.

<http://www.extensis.com>

ORDER PHOTOTOOLS (MAC & WIN)
ONLY \$99.95
1-800-796-9798

Pinch yourself, this isn't a dream (more like a dream-come-true). Thanks to the Extensis PhotoTools collection of
plug-ins, the time has finally arrived when you can create and format text in Adobe Photoshop.

We don't mean typing a couple of words, we're talking multiple text blocks, character styles,
font sizes, leading, scaling — you know, all the stuff you expect to do with type.

In true Extensis form, we didn't stop at text — we wanted to make everyday Adobe Photoshop
effects even easier too. So you can do nifty things like create drop shadows, glows, embosses and bevels in a
single step using screen previews and zoom controls. Also, automatically enhance RGB photos with one click and
create smart toolbars for quick access to menu commands. It even has an outstanding price (\$99.95)
and a 60-day money-back guarantee.

Don't take our word for it, find out for yourself how amazing PhotoTools is. Call
1-800-796-9798 to order your copy or download a free trial from our web site
at <http://www.extensis.com>. And quit pinch-ing yourself, you'll get bruises.

Extensis Corporation, 55 SW Yamhill St., 4th Floor, Portland, OR 97204 • 503-274-2020 • Fax: 503-274-0530

Extensis



STRATA™ 2.0 STUDIO Pro

Relentless 3-D Power
for Creative Professionals



StudioPro 2.0 knows that you live in a world of deadlines, rendering times and bezier splines. **It knows you live** in a digital world. Online. You live to create. VRML for the web. QuickTime VR for games. Special effects for movies. It knows you need a stable 3-D product that you can rely on...and **2.0 satisfies your cravings**. You want fast and accurate **in-context modelers** so all the modeling power is right at your fingertips. 2.0 knows you need **precision control**—of models, of cameras and lights, of every object in your animation. And **everything time-varying** so everything can be easily animated. It knows you hunger for **realistic 3-D effects** through a **custom particle generation system**. It knows you want **volumetric effects** like **mist, fog** and **haze**. You crave **3-D textures** and the ability to apply **multiple textures**, to visually map textures on objects. You need **UV mapping**. You want the broadcast quality of **field rendering**. You want **real-world camera features** and smooth motions like **pan, crane, dolly, pitch, yaw** and **roll**. You also want **motion blur, lens flare** and **depth of field**? Well, 2.0 knows. It also knows that you need all of this power in an interface that is **easy to use**. Intuitive. **No compromises**. And you want a powerful **plug-in architecture** so extensions will continually deliver even more power. Hard to believe it could get any better! **StudioPro 2.0 knows your cravings and desires**. It knows you won't be satisfied until you have **the best**. Check out the **relentless 3-D power** for yourself.

For the name of a Strata Authorized Reseller in your area, please call **1-800-STRATA3D**, 801-628-5218 or see us at <http://www.strata3d.com>. For academic pricing call 1-800-531-3227.

StudioPro 2.0 is available for Power PC Macintosh.

CIRCLE 110 ON READER SERVICE CARD

STRATA
Powering the Creative Environment™

It Knows What You Crave!



Portions of this image created by Marco Pantoja for the Multimedia World.

Strata is a trademark of Strata, Inc. QuickTime is a trademark of Apple Computer, Inc. All other trademarks are the property of their respective holders.

Site Unseen

Today's tools can help you make a great Web site, but where are the tools to manage it?

CREATED MY FIRST WEB PAGE in the fall of 1993, using an e-mail program's built-in text editor as my authoring tool and my brain as my site-management system. In the intervening three and a half years, the Web has changed a lot.

These days, I use both Adobe PageMill and Bare Bones Software's BBEdit to design and maintain complex Web pages for five separate sites. And for my site-management system? I'm still working with the ol' gray matter.

This is the world we Mac Web-site administrators live in: Our authoring tools have been transformed from stone knives into laser scalpels, but when it comes to making sure all our Web pages are in the right places, all our links are correct, and that you can get from one page on your site to every other, we're still beating rocks together.

The Five-Mouse Solution

Fortunately, I have seen the grail of site management. It's a five-mouse product that will change the way we manage Web sites forever. The only catch is that this product lives where all my other site-management tools live: in my head and nowhere else.

This is not to say that there aren't some promising tools on the horizon, and it's not to say that the tools available now don't have some powerful features. It's just that right now, there's no single tool that can effectively manage a Web site with hundreds of pages and hyperlinks.

But I can dream, can't I?

Making Do

Meanwhile, I rely on a variety of tools and parts of tools to do my job as a Webmaster. In the features of these tools, I see bits and pieces of my dream site-management program:

Bare Bones Software's BBEdit 4.0.2, a text editor and great HTML tool, offers one killer tool for site administrators. BBEdit's Find

command can be used to perform quick, powerful search-and-replace operations on folders full of HTML files. If you need to quickly update some boilerplate text, a hyperlink that's been changed, or any other text in your Web site, BBEdit can be a huge help. But the program is less intuitive than a site-management tool should be and doesn't help much with managing changed or outdated hyperlinks.

Adobe SiteMill — as the name implies —

and feel of a page-layout program rather than a word processor. But Fusion is most impressive when put to the task of site management. Once you've designed your whole site in Fusion, including page hierarchies, the program can automatically generate navigation bars in the headers or footers of your pages. Unfortunately, Fusion can't import existing Web content, so these cool features won't do you much good unless you're creating a new site from scratch in Fusion.

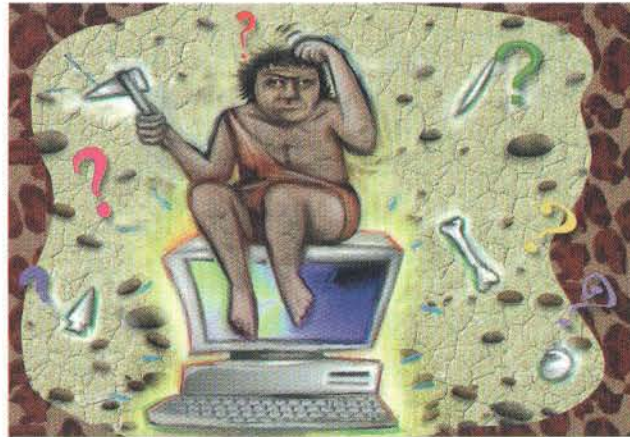
What's Left?

Even if using several tools to manage your Web site doesn't faze your budget, the truth is that the sum of the parts of BBEdit, SiteMill, and Fusion do not add up to a complete site-management application. That tool, the one I can only dream about, will keep track of all my internal and external hyperlinks (and regularly check to see that they are valid), like SiteMill. It will know the hierarchy of my site's pages and will

be able to automatically generate navigational elements, like Fusion. It will offer powerful search-and-replace features, like BBEdit. It will watch the local copy of my Web site for changes and automatically upload modified pages to the Web server via FTP. It will be able to manage sites that include several thousand HTML pages. And it will be compatible with most popular HTML editors, so that I can modify my Web pages in the program of my choosing.

In the meantime, we'll all have to make do. After all, I made do for several years using an e-mail program's text editor. In the end, I got relief. Macintosh Webmasters will have to hope that some developer takes a break from creating the next great WYSIWYG HTML editor and turns his attention instead to solving the problem of managing a mountain of Web pages. 

Jason Snell is MacUser's senior editor, online. He can be reached at net.cetera@macuser.com.



understands the structure of Web sites and links. SiteMill 2.0 (a public beta was available at press time) displays every page of your Web site and lets you see every page that links to it and every page it links to. More important, if you move a file around in your site's hierarchy, SiteMill will automatically update all the other links within your site. In terms of link maintenance, SiteMill's a gem. However, if you manage a large Web site, you may find that SiteMill's not up to the challenge. Searching for and making global changes to a large number of pages or hyperlinks requires plenty of RAM and a sturdy application. Unfortunately, when I tried to manage a site of more than a thousand pages (being careful to give SiteMill lots of RAM), Adobe's tool cracked under the strain.

If it's industrial-strength site management you need, there's NetObjects Fusion. It has received a lot of attention recently as a Web authoring tool, mostly because it has the look

Welcome to GoLive CyberStudio

Finally! A Real Design Tool for the Web

Visual Layout and Design Control

Unlike novice Web authoring tools, GoLive CyberStudio lets you visually layout Web pages using a grid and frames. Simply drag-and-drop files directly from the Finder onto your Web page. You precisely control the placement of objects—just as you would with page layout software.

HTML Native File Format

Different from other site-creation tools, GoLive CyberStudio always works in an HTML native file format. So at any stage of production you can get at your HTML source code or share files with people using any other HTML authoring tool.

Project and Site Management

Graphically design a site's structure, adjust the site's hierarchy, add pages, delete pages, as well as verify, change and update links and anchors.

Layout, Textual and Site-Oriented Modes

Design a page visually in a graphical layout mode, write HTML source code, create frames, edit JavaScripts, even structure an entire site. You are never restricted to someone else's idea of the smartest way to build a Web site.



Without a doubt, the Macintosh is the designer's computer. But till now, you've been waiting for Macintosh software that truly supports the design of a professional quality Web site. Well, stop waiting and start working!

GoLive CyberStudio is the first real solution for HTML layout, design and Web site management. It gives Macintosh users unprecedented creative control and flexibility when designing a Web site.



key benefits

Gain Creative Control and Flexibly

Share HTML Files with Others

Leverage Your Macintosh Investment

Maximize Your Productivity

Focus on Design—Not Technology

Integrate Multimedia and Interactivity

GoLive CyberStudio

The best way to design a Web site.

<http://www.golive.com>

GoLive Systems, Inc. Tel: 415-463-1580 Fax: 415-463-1598



Available from



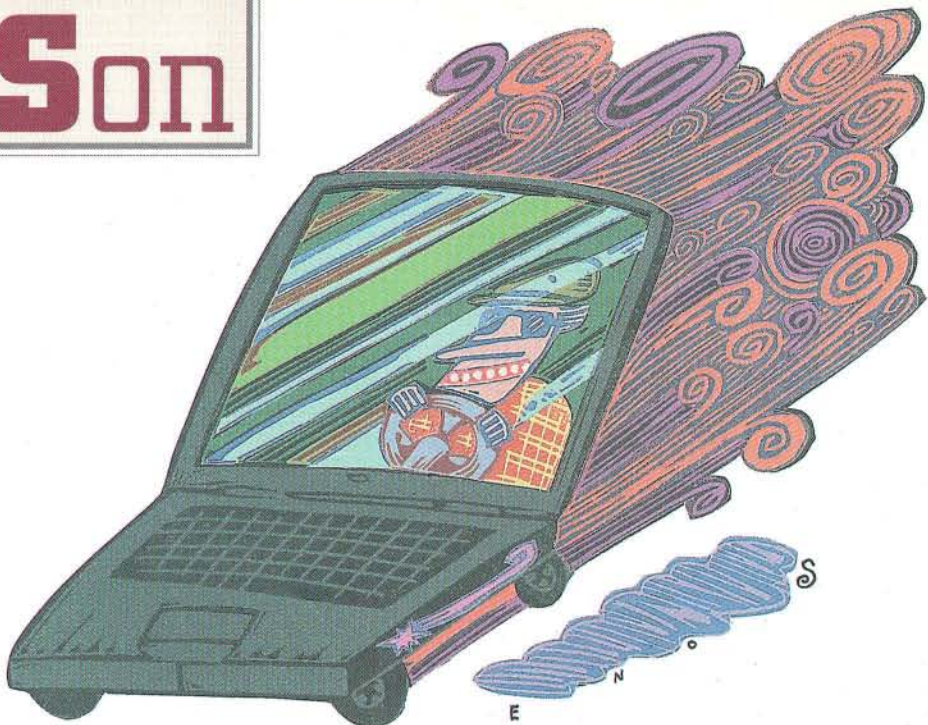
MacMall
Place Your Order 24 Hours a Day
1-800-222-2808

The Mac Zone
1-800-408-9663

MacWAREHOUSE
1-800-255-6227

HANDS ON

Are you getting the
most out of the
most customizable
PowerBook?



By Carolyn Bickford

Soup Up Your PowerBook 1400

ADDING HARDWARE to a PowerBook used to seem like performing surgery that was best left to the few who wielded a hard-to-find Torx screwdriver. Just opening the case induced fear in even the most experienced. Then along came the PowerBook 1400 to put the power of customization back into the hands of Mac users. Adding such extras as more RAM or an internal drive is practically as easy as building with Legos.

Not only is this PowerBook easy to customize but it's also built to take add-ons. Many new products have come out since this model shipped, making it the versatile machine it should be. Here's a list of the latest products that can help you create your ideal PowerBook.

Versatile Hardware

RAM Up. In the past, increasing RAM in a PowerBook usually meant wasting the RAM it shipped with. You had to throw out the original memory and replace it with new memory. The PowerBook 1400 was built to put a stop to that — there's enough room to keep the original memory and add more. For this model, you should have no trouble finding memory, since it's widely available. It's also inexpensive (about \$139 for a 16-MB DIMM).

Expansive Storage. Apple made it easy as pie to add internal storage to the 1400. You don't even have to open the case; instead, you simply slip a device into the expansion bay on the front of the PowerBook.

There's an increasing array of products that fit in this bay, starting with CD-ROM drives. Since more and more software ships on CD-ROM, you should seriously consider getting Apple's CD-ROM expansion-bay drive (about \$350) if you didn't opt to have it bundled with your 1400.

If you prefer to have both a floppy drive and a CD-ROM drive available at one time, you can get Sony's CD-ROM Discman PRD-650 (see photo), an external 6x drive that connects to the 1400 through the PC Card slot. It costs the same as Apple's CD-ROM expansion-bay drive, but it weighs only ten ounces, as opposed to a pound, and runs on its own batteries.

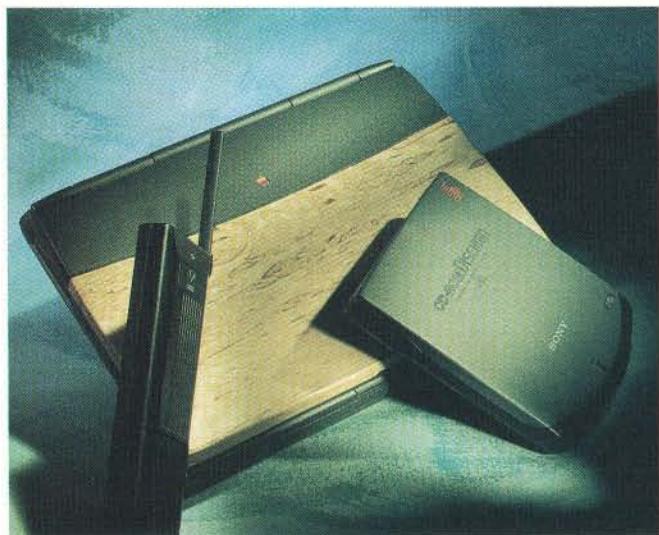
The expansion bay isn't limited to holding floppy and CD-ROM drives. VST Technologies has a range of expansion-bay options, including a 230-MB magneto-optical drive and an auxiliary 1.2-GB hard drive (either costs about \$450). VST also has plans to ship a Zip drive (\$330) for the expansion bay; it should be available now or within the next month.

Modems. To help you get to your e-mail while you're traveling, you can choose from numerous 33.6-kbps and faster PC Card modems. They're offered by the usual suspects, including Dayna and Global Village, and range in price from about \$190 to \$280 each.

If it's the Internet you need to access while you're mobile, you'll encounter a few different options. One way to go is to use a cellular connection kit from Global Village. With one of these kits, you can connect your modem to many cellular-phone models, such as those from Motorola.

There's a cheaper and more reliable way to connect to the Internet than by using cell-phone technology, but it's available only to those who live in the San Francisco Bay Area; Seattle; or Washington, D.C. You can use a Metricom Ricochet wireless modem (about \$300; see photo), which connects you to the Net via radio signals. You have to pay about \$30 per month in connection fees, and the modem rarely — if ever — achieves its maximum speed, 28.8 kbps. But you don't have to pay the expensive per-minute charges have to pay for cellular calls, and the cost of being disconnected is much lower.

Ethernet and the Internet. The PowerB



This PowerBook 1400 is all dressed up with places to go. The outfit includes a Metricom Ricochet wireless modem (left), a Sony CD-ROM Discman PRD-650 (right), and a BookWares wood finish BookCover (center).

doesn't have built-in Ethernet, but you can buy an Ethernet PC Card or combination Ethernet/modem PC Card from Dayna, Farallon, or Newer Technology. An Ethernet PC Card will set you back about \$100 to \$200, depending on its capabilities (such as how fast it is) and what type of software comes with it. The combination PC Cards cost a bit more — between \$350 and \$400 each. That's pretty pricey if you get a card that has a 28.8-kbps modem. Look for one with a 33.6 kbps-modem, to make sure you're getting the best buy.

An internal Ethernet card from Farallon, Focus Enhancements, or Newer Technology is only about \$100, and it snaps into an internal expansion slot as easily as memory fits into the RAM slots.

Video. The only way to attach a monitor, since the 1400 doesn't come with video-out capability, is to leave the expansion slot open for a video card. Either Apple's 8-bit video-out upgrade kit (about \$160) or Newer Technology's 16-bit VIEWpowr 1400/16 video card (the price was not set at press time but should fall between \$300 and \$375) will do the trick.

The Hookup. If your PowerBook is your only computer at the office as well as on the road, Pilot Technologies' BookEndz docking station, which lets you connect your PowerBook 1400 to your network and peripherals quickly, might be worthy of consideration. This device holds in place connectors for your monitor, printer, keyboard or mouse, audio in, audio out, one SCSI device, and the power supply.

The Ultimate Splurge. The most radical boost to your PowerBook — and the priciest — is to swap the motherboard with one that will make your 1400 one of the fastest PowerBooks around. The device that can give you that kind of speed is the NUPowr 1400/200 (\$675), from

Newer Technology. This card is a 200-MHz CPU, complete with a Level 2 cache, that will make your original 117-MHz processor feel pretty tortoiselike.

Looking Good

To truly make your PowerBook your own, you'll probably want to modify how it looks. The 1400 was designed to let you show your own personality by providing room for a custom BookCover, which goes on the outside of the case. There are purely aesthetic as well as practical ways to fill the BookCover slot.

If you want a unique look, the surest way to get it is to create your own BookCover. There's help for do-it-yourselfers from a company — BookWares — that specializes in BookCovers. It sells blank BookCover inserts (12 for \$10) made of card stock onto which you can print your designs. And it can print your design for you on its high-end printers (\$30 for the initial insert, \$8 for each copy) if you send it a design in an Illustrator or PageMaker file.

Also in this company's BookCover collection are leather (starting at \$20); lacquered wood finish (\$125); and inserts (from around \$10 to \$20) created by artists and celebrities, including Guy Kawasaki. If you buy any of the small external devices we've mentioned to go with your 1400, you might also want to get a BookWares leather BookCover that comes with a pocket to hold a device.

How about a more practical way to fill the BookCover? How about a power source that will let you stay mobile? How about Keep It Simple Systems' PowerCover (\$199), a solar panel that slips neatly into the BookCover slot? The PowerCover can't actually recharge your batteries, because of a quirk in the current version of the Power Manager, but it can aug-

ment power. It may increase your battery life by over 25 percent.

The company with so many aesthetic options for the BookCover slot also has plans to offer practical items for that slot. BookWares was making noises about offering both a whiteboard and speakers as BookCovers, but plans were only tentative at press time.

A Lasting Impression

The PowerBook 1400 gives you your chance to create the kind of portable computer you want. Whether you customize only the exterior — by designing your own BookCover insert, for instance — or power-pack it with memory, storage, and a new processor, it's one laptop that lets you make a personal statement about style and power. 

Carolyn Bickford, a former MacUser associate editor, dreams of doing her work poolside, using a PowerBook 1400 equipped with a PowerCover solar panel, a Ricochet modem, and a custom cup holder that clips to the display.

Directory

Apple Computer

Cupertino, CA
800-538-9696
408-996-1010
<http://www.apple.com/>

BookWares

Sausalito, CA
800-851-1551
415-339-8900
<http://www.bookwares.com/>

Dayna Communications

Salt Lake City, UT
800-531-0600
801-269-7200
<http://www.dayna.com/>

Farallon

Emeryville, CA
510-814-5000
<http://www.farallon.com/>

Focus Enhancements

Sudbury, MA
800-775-5566
617-938-8088
<http://www.focusinfo.com/>

Global Village

Sunnyvale, CA
800-736-4821
408-523-1000
<http://www.globalvillage.com/>

Keep It Simple Systems

Helena, MT
800-327-6882
406-442-3434
<http://wildwestweb.com/public/KISS.html>

Metricom

Los Gatos, CA
800-469-4735
408-399-8200
<http://www.metricom.com/>

Newer Technology

Wichita, KS
800-678-3726
316-943-0222
<http://www.newertech.com/>

Pilot Technologies

Eden Prairie, MN
800-682-4987
612-828-6002
<http://www.pilot-tech.com/>

Sony

San Jose, CA
800-352-7669
408-432-0190
<http://www.sony.com/technology>

VST Technologies

Concord, MA
508-263-9700
<http://www.vsttech.com/>



ONLY THROUGH THE EYES OF SPLASH

To easily print accurate, consistent color on your copier, take a look through the eyes of Splash.



If you're getting burned on your color output, Splash puts the flames out. And when other color servers threaten to blow it, we calmly deliver.

That's because we believe color printing should be a utopian experience. Printing accurate, consistent color easily should be something you expect, not something you aspire to.

Only Splash servers consistently give you accurate screen-to-print matching, expert prepress digital proofing and unparalleled spot color simulation — all without interrupting your workflow.

Once you've taken a closer look at what Splash offers we're certain you will agree. So relax.



Splash
Color Servers

WHEN YOU'RE SERIOUS ABOUT COLOR

For more information visit the Splash website at
<http://www.SplashTech.com>
or visit us at Seybold in booth #1917

X ©1997 Splash Technology. Splash and the Splash logo are trademarks of Splash Technology, Inc. Splash products support the Xerox color systems and Fuji Xerox Acolor copiers. Splash products are sold by Xerox worldwide, Fuji Xerox, and select Xerox resellers.

CIRCLE 54 ON READER SERVICE CARD

One World



One New York City

One

One PC Expo

IN NEW YORK



June 17-19, 1997

Jacob K. Javits Convention Center
New York City

in Miller Freeman

PC EXPO in New York is produced and managed by Miller Freeman Group USA, Inc.
PC EXPO® and ShowNet® are registered trademarks of
Miller Freeman Group USA, Inc.
One Petri Plaza • New York, NY 10119
800-829-3976 • 212-714-1300 • Fax 212-643-4800

If it'll help your business grow, we have it. Desktops. Notebooks. Workstations. Communications. Apps. System software. Peripherals. Mass storage. Just name it.

Office equipment? Got it. Mobile and Wireless? Computer telephony? That, too.

Internet stuff? We'll bring you WEB.X, the East Coast's #1 Internet business event. Networking? In '97, we'll premiere the most important networking event ever to hit the Big Apple. Networks Expo New York. MAC™ OS? For the first time anywhere, MAC™ OS EXPO.

The most solutions. The right solutions. That's PC EXPO in New York. The world's one must-attend technology event. Says who? Only 142,323 of the world's most important IT customers, and over 800 of the world's leading exhibitors, that's who.

All the IT you need to see. For one admission. At one time. In one place. PC EXPO in New York. The one and only.

To attend, call 800-829-3976, ext. 2980 or register online at <http://www.pcexpo.com>.

Exhibitors! Reach more than 140,000 top IT buyers. Call 800-829-3976, ext. 2930 and ask for Geoff Poli.

Source Code: 28

By Bob LeVitus and Christopher Breen

Help Folder

Mailing faxes, icon overlap, and a partition drive.

All Faxed Up and Nowhere to Go

Q. I received a fax via modem, and I would like to paste it into an e-mail message. Is there a way to do this or to attach the fax to e-mail?

Graham Sheppard
via the Internet

CHRIS: We should start by clearing up a common misconception. Even though the electronic documents you receive with your fax modem look like editable text, they're not. They're pictures.

BOB: That is correct. Whether your fax comes to you by way of a modem or a standard fax machine, the message you receive is actually an image of the original document, not the text itself. But just because it's an image doesn't mean you can't send it along to someone else. Just treat the file as you would any other e-mail attachment. Open the fax with your fax software, save it as a PICT file (most fax software offers this option), and attach it to an e-mail message. The person receiving it will be able to open it with any graphics program or even the lowly SimpleText.

CHRIS: As the admittedly more biplatformed member of the Help Folder squadron, I should mention that if the receiver of your e-mail is using a non-Mac OS system, your job becomes a little trickier. In such a case, you're better off saving the fax as a PC-friendly PCX file with a utility such as the shareware program GraphicConverter or

Handmade Software's commercial graphics-conversion utility, Image Alchemy. To make certain that the Wintel-using person you're lobbing this fax to will be able to open the file, use Tommy Brown's shareware program Ziplt to compress the file and be sure the file is not smushed in MacBinary format (select the Never Use MacBinary option in Ziplt's Compression Preferences dialog box).

BOB: Of course, Graham, you can avoid this whole attachment problem by using an OCR (optical character recognition) program to make the fax editable. Once your fax has been optically recognized, you just cut the text and paste it into the e-mail message.

CHRIS: If the fax you've received is fairly clean — and I'm talking appearance, not content — OCR software works pretty darned well. If you have a Global Village modem (Platinum or earlier), you've already got GlobalFax OCR. Just open the fax, select Save

As from the File menu, and choose the format you'd like to use (see figure 1). Soon, your fax magically turns into editable text — albeit with your em and en dashes turned to hyphens and a few extra spaces shoehorned in between words.

BOB: I assume from your tone that the good old days of bundled OCR are over for Global Village.

CHRIS: I'm afraid so. To be fair, none of the major fax-modem vendors bundle OCR software with their products any longer. Global Village used to include it with the TelePort Platinum but is now charging \$49 for it. If you have a Global Village modem and don't need



the advanced capabilities of full-featured (and expensive) OCR programs from Caere and Xerox, that \$49 will buy you a perfectly capable fax-to-text program.

Icons Overlapping at Startup

Q. Is there any profound meaning to the fact that a couple of my Macintosh's icons overlap one another at startup? Does this indicate a conflict?

HerbaMac
via AOL

BOB: Nope. It's not a conflict at all, though it looks odd. Aside from being ugly, it won't cause a problem.

CHRIS: If you don't like it, you can use a commercial startup manager such as our fave, Conflict Catcher, or the other one, Now Startup Manager, which contain special code that prevents this visual anomaly.

Where'd My App-Switching Shortcut Go?

Q. For some odd reason, the Finder shortcut Command-Tab has stopped working. Pressing Command-Tab used to allow me to switch among open applications without pulling down the Finder menu. Is there any way to reenact this shortcut?

Ed Napoliello
via the Internet

BOB: My diagnosis (and as you know, I'm a doctor, or at least I play one on TV) is that you used to have an extension or control panel that gave you this functionality. And now you don't. **CHRIS:** My best guess — and that's the one they pay me for, folks — is that you have Microsoft Office 4.2.1 installed and have since then lost or disabled the Microsoft Office Manager

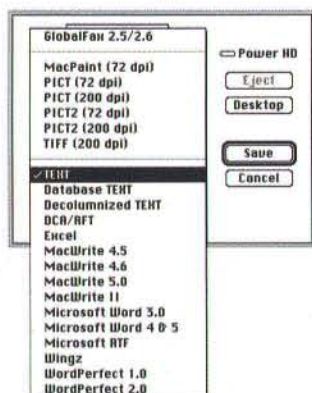


figure 1 / Once you have received a fax via a Global Village fax modem, you can save it in one of several word-processing or graphics formats.

WRITE TO HELP FOLDER/TIPS

c/o MacUser
50 Beale Street, 12th Floor
San Francisco, CA 94105

Don't want to wait for an answer? Post your question on the MacUser Forum on CompuServe, or send e-mail to helpfolder@macuser.com or tips@macuser.com. We pay \$25 to \$100 for any undocumented tips we publish.

Tips / Hidden Things Revealed

URL Retrieval

If you've saved a Web page as text in Netscape Navigator or any Web browser but forgotten where you originally found it, the Finder can help. In the Finder, select the text file and press Command-I. The URL's in the Comments box.

John Teti Jr.
via the Internet

Bring Out Your Text

When you disable Auto Load Images in Netscape Navigator's Options menu, in order to surf more rapidly, Navigator usually places picture icons atop text — obscuring the words below. To bring the text forward, click within the browser window and type Command-A to select everything in the window. Click again to deselect all, and the full text will be revealed.

Gabriel Dorado
Cordoba, Spain

control panel. Command-Tab is not — and never has been — the Apple-approved shortcut for switching among open applications. A variation of it is available on Wintel machines, however. Over on the dark side, Alt-Tab switches among applications. Microsoft's introduction of this shortcut on the Mac was just its way of making the PC and Mac work the same way — the Microsoft Way.

The funny thing is that Microsoft actually duplicates the Command-Tab shortcut for two very different functions in MS Office — although both make the Mac work more like Windows, of course. If you have the Microsoft Office Manager control panel installed and have checked Enable QuickSwitch, Command-Tab will pull this application-switching trick. If you've turned off QuickSwitch (or disabled its parent control panel), Command-Tab will enable DOS-like menus in Microsoft Word 6 — you know, funny little underlines appearing in menus that can be navigated with the keyboard's arrow keys.

BOB: Fortunately, you don't need to buy Microsoft Office just to switch applications. We know of at least half a dozen utilities — shareware as well as commercialware — that provide keyboard application switching and (usually) much more.

I use a commercial program, CE Software's QuickKeys, for this time-saving task, using its Mac OS Specials: Next/Previous Application shortcuts to assign the Next and Previous Application functions to Command-Tab and Command-Shift-Tab, respectively.

CHRIS: You could, of course, do the same thing

just as handily with Binary's KeyQuencer 2.0 or WestCode's OneClick. Or, as long as we're talking about commercial programs, the two best-known commercial file launchers — Binary Software's Square One and Natural Intelligence's DragStrip — both offer keyboard application switching as well as other time-saving features.

BOB: We also found at least three shareware programs — AppTab 1.3, eXpress 3.0.1, and Program Switcher 4.2.0 — that seem to work as advertised.

AppTab, an \$8 shareware control panel from Dragonsoft, pops up a little windoid that has keyboard-selectable icons for all currently running apps.

CHRIS: eXpress, a \$10 shareware application from Laser Point, gives you all the functionality of the Application menu (Hide Others, Show All, and the like), as well as a pop-up menu and more, from the keyboard.

BOB: Last but definitely not least is Program Switcher, a mighty little \$10 shareware control panel from Michael F. Kamprath that would be my personal fave if I didn't already use QuickKeys. It does everything the other three do and is even more customizable (see figure 2).

CHRIS: All three are completely cool in their own way; download 'em all (a grand total of less than 400K, thanks to modern compression technology), try each for a few days, and pay the shareware fee for the one you like best.

BOB: Ain't shareware grand?

Playing in a Black-and-White World

Q. My husband and I just bought our children an old 8-MB Mac that cannot be upgraded. We were told there are still old games

for systems such as ours, but we haven't been able to locate any. Do you know of a source for such games?

Mother in Need
via the Internet

CHRIS: Jeepers, Mom, I told you never to contact me here. You're gonna embarrass me in front of the guys.

BOB: Is that your mother?

CHRIS: No, not really. The only computer-related question my mother ever asks is, "Why can't I log onto AOL?"

BOB: Your mom, my dad and sister, and everyone else in the world . . .

CHRIS: In addition to gaming help, this particular mother is in need of a more understanding boss. She sneaked onto the office Mac to send us personal e-mail, and she didn't want her corporate overlord to know about it — thus the alias.

BOB: Thanks for the background information. Do you have an answer for her?

CHRIS: But of course.

Mom, although most modern Mac games require a PowerPC processor and a trough-full of RAM, you can still find games that run on a modest Mac such as yours. If you'd like to go the commercial route, Varcon has just what you're looking for. It's called the Black and White Arcade Pak; contains 12 classic arcade games such as MacMan, Diamonds, and Bricklayer (a Tetris-like game); costs \$29.95 (list); runs on black-and-white Macs with System 6.0.7 or later; ships on four low-density floppies; and can be purchased directly from Varcon (800-266-6700 or 619-563-6700).

BOB: I love those Varcon folks, although they've cost me countless hours over the years. They also sell several sets of classic color games, including Mac Arcade Pak (\$25). The set contains versions of Pac-Man, Tetris, Asteroids, Missile Command, and others. You'll need 4 MB of RAM and support for 256 colors.

Anyway, here's another idea: When your boss goes out to lunch, use the office Mac to download classic games from such online services as CompuServe and — provided you can log on, of course — AOL. On CompuServe, type GO MACFUN and check out Library 9, the Classic Games forum. If you're a ZiffNet member on CompuServe, type GO ZMC:ZMACAR and take a peek at the software libraries for loads of classic fun. On America Online, use keyword MGM; double-click on Download Games, Hints, and Demos; double-click on Software Libraries; select Software Search; and type Black and White into the



figure 2 / You can use Program Switcher's control panel to create a keyboard shortcut that cycles through your open applications.

ZDNet.

All the computing information you need, packed into one dynamic Web site.

World-famous software library.

Get ready to download! ZDNet has thousands of the highest-rated shareware programs, all virus-tested and reviewed – and the latest commercial demos, too!

Enroll in ZDNet University.

Be one of the first to join our online university and take courses in Java, C++, HTML, and more! Learn from expert instructors in the comfort of your own home or office.

Industry-standard product reviews.

Which products are best for you? Turn to ZDNet for expert product reviews of everything from the latest tools for power users to the best software for kids.

The latest news 24 hours a day.

From breaking technology news to your own FREE customized news feed, ZDNet delivers the in-depth coverage you need, from the sources you can trust.

Powerful search engine.

No time to browse? Use ZDNet Find It to quickly locate the specific computing information you need.

ZDNet Community Center.

Join in! With 500+ journalists and more than 3 million users, ZDNet is an active community with unmatched computing expertise.

Explore ZDNet today at www.zdnet.com!

No matter what you use your computer for, you need a source of comprehensive computing information you can count on. When you log on to ZDNet, you'll find the latest news, product reviews, top-rated shareware, lively discussions

and more. It's all brought to you by Ziff-Davis, the world's leading provider of computing and Internet information. Visit ZDNet today at www.zdnet.com and explore the world's most trusted computing site!



www.zdnet.com

The world's most trusted computing site.

All companies, products and services are registered trademarks of their respective companies.



Tips / E-mail

Spam Prevention

In the January '97 issue, Chris, Bob, and Andy discuss the difficulties of preventing junk e-mail. As they mentioned, spammers often obtain addresses by autskimming them from publicly accessible posts, such as from Usenet groups. Here's a way to prevent this skimming:

Insert "fake" characters in your Usenet, browser, or e-mail reader's address preferences. The fake characters are recognizable by people reading your posts but not by robots.

For example, if your e-mail address is bubba@myemail.com, you can set NewsWatcher so that it shows your e-mail address as **bubba@myemail.com**. In your sig file, simply tell people to delete the * characters.

S. M. King
via the Internet

Reroute Navigator 3.0 E-mail

Navigator 3.0 may be a great browser, but I prefer Eudora 3.0.1 for e-mail, particularly because Eudora allows me to log and save all the messages I send. Occasionally I use Navigator to send messages — for instance, when I contact

someone whose e-mail address appears as a link on a Web page. Problem is, I want to track all the e-mail I send in a single location.

Fortunately, by using Eudora's filters, I can keep all my outgoing mail — even messages sent from Navigator — in one place. Here's how:

In Navigator, Select Mail and News Preferences from the Options menu; click on the Composition tab; and under the "By default, email a copy of outgoing message to" heading, click on the Self check box after Mail Messages — a copy of each message you send with Navigator will be sent to your e-mail address. In Eudora, set a filter to direct any mail coming from yourself to the Out mailbox. To do this, select Filters from the Special menu, click on the New button, enter your e-mail address in the header, select Transfer To under the Actions heading, and choose Out from the Transfer menu.

All mail sent from Navigator — and in my case, it's not a lot — will now appear in Eudora's out box. If you have the commercial version of Eudora, you can even change the status of the message to Read, so that it doesn't appear as new mail.

Kurt Ramsauer
via the Internet

smaller allocation blocks on your disk, which leads to less wasted space.

CHRIS: How you decide to partition your disk will depend on the kind of things you do with your Mac. Because I occasionally work with digital-audio files that consume hundreds of megabytes, it doesn't make sense for me to chop my 2-GB disk into tiny pieces. I've also been known to copy entire CD-ROM games onto my hard disk and, again, small partitions would do me no good. I do, however, maintain a 300-MB partition for my System Folder and a few select applications.

BOB: If you don't tackle Chris' kinds of disk-hungry tasks, a good general rule of thumb is to create partitions no smaller than 200 MB. A partition of this size keeps allocation-block sizes down (around 3K per block) but still gives you enough elbowroom to work with larger applications if you need to.

I myself have a 2-GB disk partitioned into an 800-MB partition for my data and System Folder (I call it BootMan) and a 1,200-MB partition (The Rest of It) for my applications, games, utilities, telecom software, and the like. Anything that needs to be backed up on a daily basis lives on BootMan; it gets backed up every night to DAT tape. Since I have master disks or CD-ROMs for almost all the stuff on The Rest of It, I back that partition up only a few times a year.

The Addendum Department

CHRIS: Several readers wrote in to say that even an arbitrarily timed Command-period works as well as or better than our well-timed-Shift-key solution for stopping Startup Items at launch.

BOB: Also in February, we rendered the opinion that browsers, as a whole, weren't particularly stable. That still holds true, but several readers swear that trashing Netscape's Global History file makes versions 2.1 and later more "robust" or "reliable."

If you want to give it a try yourself, look for the dastardly file in the Netscape f folder inside your Preferences folder inside your System Folder. ☞

Bob LeVitus is the author of many computer books and the Mac columnist for the Houston Chronicle. Christopher Breen is the author of The Macintosh Bible Guide to Games, published by Peachpit Press.



You can find the shareware and freeware programs referenced in this article at MacUser's Software Central (<http://www.zdnet.com/macuser/software/>). You can also find them in the MacUser area on CompuServe (GO ZMC:MACUSER).

search field. You'll see a long list of classic games to choose from.

CHRIS: If you've eschewed the pleasures of online services for the heady thrills of a dedicated ISP, rummage around the major FTP and Web sites — Stanford University's ftp://sumex-aim.stanford.edu/info-mac/_Game/ and the University of Michigan's <http://www.umich.edu/~archive/mac/game/>.

Please note: These college-based FTP sites are set up largely for the benefit of academics who use them to further their studies and research. If you hog these servers during work hours, you may prevent a hard-working, underpaid university researcher from finally formulating the perfect pimple cream. So check the time zone of the location you're connecting to, and if possible, stay out until well after quittin' time.

BOB: Or try out <http://www.shareware.com/>, a Macintosh-friendly repository for thousands of shareware and freeware files with a better-than-average search engine to boot (pun intended).

Circulating Partitions

Q. In your February '97 column, you wrote about the benefits of partitioning hard disks. I have a 1.2-GB hard disk, and I'd like to make three or four partitions. What size partitions should I use?

dicknor320
via AOL

CHRIS: Partitioning — like the frequency with which one changes socks, or how one names one's cat — is a very personal matter. Before we discuss partitioning strategies, perhaps Bob would like to fill us in on the act itself.

BOB: Be glad to.

As you probably know, you can, with the proper software, break a hard disk up into smaller volumes or *partitions*. To partition a disk, you must first erase it — yup, you lose your data, so back up first. Once the disk is initialized, you then use your formatting software to create the partitions.

Most disk formatters allow you to decide whether you want a partition to mount on startup or stay hidden until you use a utility to manually mount it.

CHRIS: Manual mounting may sound like a pain in the patoot — and it can be — but it has its advantages. To begin with, if your Mac is in an environment where any Tom, Dick, or Mary can mouse around with it while you're away, it's nice to have a "hidden" partition that isn't right out there on the desktop.

BOB: In such situations, you'll be happy that quality formatters let you password-protect and encrypt your partitions.

CHRIS: Also, when all your partitions aren't mounted, your hard drive's read/write head has to scan a smaller area and therefore scans more quickly.

BOB: And as we mentioned last February, partitioning your disk means that you create



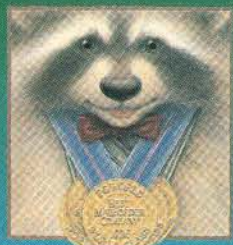
DIRECT LINE

For many of you, mail order is your primary means of purchasing Macintosh products and services. That's why MacUser has put together the following special section.

It's what you've been demanding—a convenient place to quickly find the products you need from the vendors you want to buy from.

MacUser's Direct Line to products is just one more reason to turn to MacUser for the relevant information aimed at the serious user.

MacUser



MacConnection®

The Original Macintosh Mail-Order Source—Since 1984!

UPGRADE!

Director 6 Multimedia Studio
Upgrade Only
\$489.95 39563
Buy Director 5 now and get a FREE copy of "Shocking the Web"—a \$49.95 value! FREE upgrade to Director 6 upon release. (5/15/97)
New Version!

Adobe Photoshop 4 **NEW!**
New Features!
New Filters!
New Special Effects!
Upgrade Only
\$134.95 32923
Adobe Photoshop 4.0

Macintosh System 7.6
Upgrade CD
Upgrade Only
\$69 37345
Runs Applications Up to 40% Faster!
*System 7.5x users only. Proof of ownership required.

Adobe PageMaker 6.5
Exclusive Offer! Get Pantone ColorWEB FREE w/Purchase!
Upgrade Only
\$94.95 32846
Adobe PageMaker 6.5

Peripherals!

KENSINGTON **NEW!**
Orbit Trackball from Kensington
The Sportiest Trackball Designed!
Only
\$69.95 39536

Robotics
The Intelligent Choice in Information Access
Nearly Twice As Fast As 28.8!
Only
\$219.95 37317
Sportster 56K Faxmodem

The Super Portable, Super Fast, Super Newton!
Apple Newton MessagePad 2000
As Powerful and As Fast As a High-End Desktop!
Only
\$949 36376

Newer Technology Inc.
MAXpower 400 MP Dual 200MHz 604e Power Processor Upgrade double the speed of Your Power Mac!
Effectively Operates at 400MHz!
Only
\$1799 37675

Sountastic 8X (4 Disc) CD-ROM Changer
Get 8X Speed AND 4 CD-ROMs Mounted at All Times!
All at a GREAT Price!
Only
\$249.95 38334
Hi VAL

ViewSonic OptiQuest Q100 Monitor
20" (18.4") Viewable Display
0.28mm Dot Pitch/1280 x 1024 Resolution
OnView® Controls
Only
\$1149 39389
ViewSonic

EPSON **NEW!**
PhotoPC 500 Digital Camera
Only
\$499 35047
Sharp 24-bit Images at 640 x 480 Resolution! Accepts Add-on Lenses; Includes Built-in Flash!

Fuji 10-Pack Mac Zip Disks
As low as \$12.99 per disk!
35116 with \$20 Rebate \$129.95
38246 with 2 FREE disks \$144.95
*with rebate **mail-in offer

CDR-74 Media 100 Commercial Pack
Less than \$5.00 per Disk!
Only
\$499.95 39020

Epson Takes Inkjet Printing to a Whole New Level!

NEW! Epson Stylus 600
Print laser-quality stationery, professional presentations, reports, transparencies, greeting cards, Web pages, T-shirt transfers, life-like photo reproductions and more!



Incredible 1440 dpi!
COLOR!
Only
\$299

- 1440 x 720 dpi Photo Quality Color!
- Loaded with features for maximum productivity!
- Built-in Photo Quality color printing - no need for kits or special paper!
- Comes with award-winning Look Your Best Color Pak!
- 100 sheet/10 envelope paper capacity!



Save 100MB of Stuff at a Time...and Save Money, Too!

FREE Zip Disk with purchase of Drive!



- Dependable, fast, and easy to use
- Stores up to 100MB
- Easily transportable—weighs about a pound
- Comes with FREE Zip tools software
- Transfer rate of up to 1.25MB/second

Zip gives you hard drive-like performance with unlimited storage potential!

Now Only \$149.95 19171
New Low Price!

MICROTEK ScanMaker E3

Better Images Through Innovation.
Your affordable choice for fast, single-pass 24-bit flatbed scanning!



- 300 x 600 dpi optical resolution; 4800 dpi max
- Legal size scanning area
- Incredible Price!

Only
\$199! 26232

www.macconnection.com
Now shop on-line with a name you can trust!

- Search our 10,000+ product database
- Access daily price updates on all products
- Link to other valuable resources and manufacturers

"Best Mail-Order Company!"



MacConnection was awarded "Best All Around Company" for the second year in a row by The Boston Computer Society!



The highly regarded Berkeley Mac Users Group (BMUG) named MacConnection the Best Mac Mail-Order Company.



New Low Prices!
on New StarMax Mac Systems!

- Models can be configured with
- 240MHz 603e
 - 32MB RAM
 - 2.5GB HD
 - 16X CD-ROM
 - 4MB VRAM
 - Mac OS 7.6
 - Microsoft Office
 - 5PCI Expansion Slots
 - 28.8 Modem
 - 512K L2 Cache

plus some include hundreds of dollars of FREE Software!

Never before could you get so much for so little!

5 Year Warranty

AS LOW AS **\$1249**

Call Us First!
THE BEST PRICES ON MAC SYSTEMS!
800-800-MACs



UMAX®

SuperMac C500

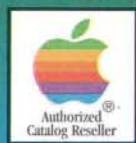
Maximum Expandability!

- 180MHz upgradeable 603e processor
- 16MB RAM • 1.2GB Hard Drive
- 8X CD-ROM • 1MB VRAM
- 256K L2 Cache • 2 PCI Expansion Slots
- Keyboard, Mouse, and Tons of FREE Software!

38084

ONLY \$1299*

*After mfr.'s rebate



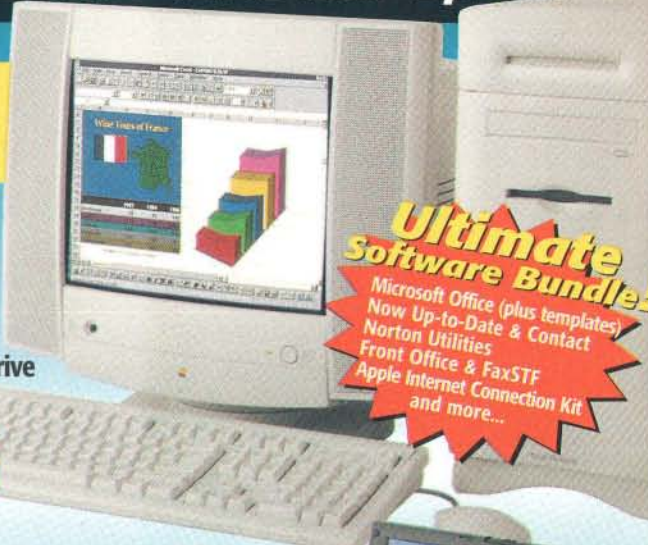
Just Released!

Power Mac 6500
250MHz • 12X CD-ROM • Zip Drive!

The Small Business Macintosh!

- 250MHz
- 48MB RAM
- 12X CD-ROM
- 33.6 modem
- 2MB VRAM
- Built-in Zip Drive

Call for Pricing!



Ultimate Software Bundle!

Microsoft Office (plus templates)
Now Up-to-Date & Contact
Norton Utilities
Front Office & FaxSTF
Apple Internet Connection Kit
and more...

SAVE
ask about...
LEASING OPTIONS
for BUSINESS
CALL FOR DETAILS

NEW!
extended service plan
ESP

Supplement the mfr.'s warranty for 4 full years from date of purchase!

The Fastest Portable on the Planet!

PowerBook 3400

- 12.1" Active Matrix
- 240MHz/603e
- 16MB RAM
- 3GB Hard Drive
- 12X CD-ROM
- 256K L2 Cache
- 1MB VRAM
- 33.6 Modem

NEW Model!

Call for Pricing!



Software!

Adobe	
31327 Adobe PageMill 2.0 Mac	\$94.95
32918 Adobe Photoshop 4 Mac	549.95
30728 Adobe Type Manager Deluxe 4	49.95
Aladdin	
34133 Spring Cleaning 1.0	44.95
28320 StuffIt Deluxe 4.0 Mac	72.95
Alien Skin	
35801 Eye Candy 3.0 Mac	119.95
Berkeley Systems	
32285 AfterDark 4.0 CD	29.95
Casady & Greene	
37633 Conflict Catcher 4.0	64.95
Claris	
25476 FileMaker Pro 3.0 CD & Disk	199.95
Connectix	
31151 RAM Doubler 2.0	54.95
33984 Speed Doubler Mac 2.0	54.95
Delorme	
29359 Street Atlas 3.0 Mac CD	39.95

Delta Tao	
33781 Eric's Ultimate Solitaire CD	\$36.95
Extensis	
31092 Extensis PhotoTools 1.0 Mac	94.95
Intuit	
26544 QuickBooks 4.0 Mac	119.95
32230 Quicken 7.0 Mac Diskette	39.95
32233 Quicken Deluxe 7.0 Mac	59.95
Macromedia	
32992 Macromedia FreeHand 7.0	389.95
28103 Macromedia Director 5.0 CD	849.95
MetaTools	
27498 KPT Bryce 2 Mac CD	169.95
Qualcomm	
30931 Eudora Pro 3.0 Mac	59.95
Quark	
16769 QuarkXPress 3.3.2 PMac CD	649.95
Symantec	
6748 Norton Utilities 3.2 Mac	95.95
32164 SAM 4.5	69.95
3955 Suitcase 3.0 Mac	69.95

SUPER LOW SIMMS!

1MB SIMMS
as low as
\$16.95
1107

4MB
as low as
\$29.95

8MB
as low as
\$59.95

16MB
as low as
\$119.95

32MB
as low as
\$239.95

FREE!

CATALOG SUBSCRIPTION!

CALL TODAY!

(Mention source code 697MU)

☐ MacConnection ☐ PC Connection
Please check the catalog(s) you wish to receive

Name _____
Address _____ Apt _____
City _____ State _____ Zip _____



10,000 HOT PRODUCTS 24 HRS A DAY!

800-998-0055

Order as late as 3 a.m. ET and still get Overnight Delivery!
FAX US AT: 603-446-7791

MACAD 697MU

MAC BARGAIN\$®

Buy with Confidence Online from MAC BARGAIN\$.

- **NEW!** To place an order, e-mail to mac.bargains@mzi.com
- **NEW!** For detailed product information, e-mail to mac.bargains.info@mzi.com
- Over 2500 products in stock



PowerCenter, PowerTower and PowerWave Computers

- PowerPC™ 604e processor running at up to 200MHz
- 8 or 16MB RAM
- Up to a spacious 2GB hard drive

PowerComputing

PowerComputing Model	Order #	Price
PowerCenter 132 16/1GB	#91537	\$1495
PowerCenter 150 16/1GB	#86634	\$1595
PowerTower 200 16/2GB	#86648	\$2195
PowerTower Pro 180 16/2GB	#86642	\$2395
PowerWave Pro 200 16/2GB	#86643	\$2595
PowerWave 120 8/1GB	#86603	\$1350
PowerWave 132 8/1GB	#86601	\$1395

And more! While supplies last, so call today.

StarMax™ MOTOROLA

StarMax Computers

- Upgradable 240, 200, 180 or 160MHz PowerPC™ 603e processor
- 16 or 32MB RAM, expandable to 144MB

Motorola

Motorola Model	Order #	Price
StarMax 4000/160 DT	#81525	\$1595
StarMax 4000/160 MT	#81526	\$1795
StarMax 4000/200 DT	#81527	\$2495
StarMax 4000/200 MT	#81528	\$2695

We carry the full line of StarMax Computers.
DT: Desktop MT: Minitower

UMAX SuperMac Computers

- Upgradable PowerPC™ 603e processor running at up to 240MHz
- Up to 32MB RAM

UMAX

UMAX Model	Order #	Price
SuperMac S900 225	#90905	\$3399
SuperMac S900 233	#78175	\$4199
SuperMac S900 250	#78174	\$4899
SuperMac S900 Dual 200MHz	#78176	\$4499

Ask your Sales Advisor about the rest of the SuperMac line.

Software

Activision	
84360 Mech Warrior 2	\$44.83
Adobe	
93952 Adobe Acrobat 3.0	\$184.49
88827 Adobe After Effects 3.0 CD	\$648.89
88205 Adobe Illustrator 7.0 Upgrade CD	\$89.98
83069 Adobe PageMaker 6.5 CD & 3.5"	\$548.89
37611 Adobe PageMaker 6.5 1/2	
Win 95 Comp Upgr	\$118.89
83068 Adobe PageMaker 6.5 Upgrade	\$89.99
88414 Adobe PageMill 2.0	\$98.89
83932 Adobe PageMill 2.0 Upgrade	\$48.89
81740 Adobe Persuasion 4.0 Upgrade	\$118.89
83083 Adobe Photoshop 4.0	\$548.89
83084 Adobe Photoshop 4.0 Upgrade	\$134.49
04670 Adobe Premiere 4.2 CD	\$488.89
03971 Adobe Streamline 4.0	\$124.98
AEC Software	
03456 Fast Track Schedule 4.0	
PowerMac or Mac	\$167.20
Aladdin	
05827 StuffIt Deluxe 4.0	\$66.11
85605 StuffIt Deluxe 4.0 Upgrade	\$32.36
81689 StuffIt Dlx 4.0/4MB Dblr 2 Bundle	\$79.99
Allen Skin	
81008 Eye Candy	\$112.25
Berkeley Systems	
83662 AfterDark 4.0 w/\$10 Rebate	\$27.46
83667 You Don't Know Jack Sports	\$27.46
Bestware	
99042 MYOB Accounting w/Payroll 7.0	\$121.03

QUARK Save \$123!

QuarkXPress 3.32 and QuarkImmedia Bundle

- QuarkXPress – the choice of editors and publishers worldwide!
- QuarkImmedia – the ultimate multimedia design package!

Quark #82536
#95320 QuarkXPress \$657.98



Only \$779.98

Caere	
91304 OmniPage Pro 7.0 Upgrade	\$116.17
Casady and Greene	
82126 Conflict Catcher 3/RAM Dblr/Speed Dblr Bndl	\$98.89
Claris	
86444 Claris Organizer 2.0	\$62.45
92638 ClarisWorks 4.0 Comp/Ver Upgrade	\$62.38
88830 FileMaker Pro 3.0	\$179.99
88829 FileMaker Pro 3.0 Ver/Comp Upgrd CD/3.5"	\$89.90
Connectix	
84048 Connectix RAM Doubler 2	\$52.44
90375 Connectix Speed Doubler for Mac 2.0	\$54.49
Corel	
91628 Corel GALLERY 2 (Mac)	\$33.75
92234 Corel Stock Photo Library 1	\$869.99
84052 CorelDraw 6 Suite Ver/Comp Upgrd	\$136.12
03972 WordPerfect 3.5 Full Version CD-ROM	\$155.99
83933 WordPerfect 3.5.1 CV Upgrade CD-ROM	\$78.75
Dantz	
02586 Dantz Retrospect 3.0	\$136.13
04194 Dantz Retrospect w/10 User Remote	\$247.11

Dataviz

96908 MacLink Plus/Translator Pro 8.0	\$87.11
96908 MacLink Plus/Translator Pro 9.0	\$87.35
Datawatch	
02077 Virex 5.7 for Mac	\$64.49
Davidson & Associates	
82303 WarCraft: Battle Chest	\$49.98
DeLorme	
96777 Street Atlas USA 3.0	\$37.44



Apple System 7.5 to 7.6 Upgrade w/TechTool Pro

- Built-in Internet capabilities
- Advanced multimedia features
- TechTool Pro – the ultimate troubleshooter!

Apple #78250

Epson

82860 Epson PostScript Level 2 SW for Stylus Pro	\$190.90
83649 Epson PostScript Level 2 SW for Stylus XL	\$238.43

Equilibrium

98360 DeBabelizer Toolbox 1.6	\$233.40
-------------------------------	----------

Extensis

84233 PhotoTools	\$87.35
91343 GXTools	\$87.35

Farallon

96801 Farallon Timbuktu Pro for Mac 2.0 2-Pack	\$167.19
96800 Farallon Timbuktu Pro for Macintosh 2.0	\$127.38

Fractal

37624 Fractal Design Dabbler 2.0 CD	\$44.49
93967 Fractal Design Painter 4 Upgrade for Mac	\$124.49
91289 Fractal Design Poser	\$124.49

FWB Software

06271 CD-ROM Toolkit 2.0	\$46.24
00555 Hard Disk Toolkit 2.0	\$116.17
05476 Hard Disk Toolkit Personal Ed 2.0	\$46.24

GDT SoftWorks

00642 PowerPrint 3.0	\$88.56
82867 StyleScript 3.0	\$88.56

GraphSoft

97781 MiniCad 6.0	\$519.42
-------------------	----------

Insignia

98475 SoftWindows 3.0 for PowerMac CD	\$292.06
87440 SoftWindows 95 v4.0	\$349.99
87442 SoftWindows 95 v4.0 Upgrd 1v3.0	\$149.99
91088 SoftWindows for Performance	\$114.93

Intuit

93222 Quickbooks 4.0 for Mac	\$112.39
89653 Quickbooks Pro 4.0 for Mac	\$182.34
04230 Quicken 7 for Mac	\$39.99
89685 Quicken Deluxe 7 for Mac	\$57.52

Jump Development

92896 Optimum RAM Charger 2.0	\$28.75
-------------------------------	---------

Leister Productions

05984 Reunion 4.0 The Family Tree Software	\$89.78
--	---------

Macromedia

86007 Director Multimedia Studio 2 Upgrade	\$457.79
92266 Director Multimedia Studio 2	\$894.49
82501 FreeHand 7	\$388.89
84212 FreeHand 7 Comp Upgrade	\$148.89
84242 FreeHand 7 Version Upgrade	\$148.89
92290 FreeHand Graphic Studio 2	\$448.89

MetaTools

81843 Bryce 2.0	\$168.99
84479 Kai's Power Goo	\$48.89
06668 Kai's Power Tools 3.0	\$124.49

Micromat

87067 TechTool Pro	\$84.89
--------------------	---------

Microsoft

37803 Cinema 97 for Mac CD	\$29.99
95750 Encarta 97 Mac CD	\$69.99
04545 Excel 5.0 for Mac Version Upgrade	\$118.89
04293 Flight Simulator 4.0 Mac	\$44.49
83316 Office 4.21 Upgrade w/Essential Tools	\$274.49
00596 Word 6.0.1 Version Upgrade tMac	\$118.89
05750 Works 4.0 for Mac	\$48.89

Now Software

86442 Now Utilities 6.5 Upgrade	\$23.79
04191 Now Utilities 6.7	\$78.89

ParSoft

88389 A-10 Attack CD-ROM	\$43.69
--------------------------	---------

Qualcomm

91072 Eudora Pro Mac	\$59.99
----------------------	---------

Quark

95320 QuarkXPress 3.32 Native PowerPC	\$635.49
78277 QuarkXPress/Immedia/Strata Bundle	\$998.98
78275 QuarkXPress/QuarkImmedia	\$779.98

Symantec

06231 ACT! 2.5 for Mac	\$149.99
93976 Norton Utilities 3.2 Upgrade	\$38.89
04890 Norton Utilities 3.5	\$94.49
81746 SAM 4.5 Upgrade	\$28.89
80142 Suitcase 3.0 Upgrade	\$39.99

Monitors

Hitechi

91096 Rasterops SuperScan MC 20"	\$1311.00
78921 Rasterops SuperScan MC 801 21"	\$1598.00

NEC

27642 NEC MultiSync C400 14" Monitor	\$295.59
80689 NEC MultiSync E1100 21" Monitor	\$1649.00
86793 NEC MultiSync M700 Ctr Monitor 17"	\$769.99

Sony

06676 Sony Multiscan 15s II Monitor	\$350.56
82687 Sony Multiscan 100sf 15" Monitor	\$406.17
82686 Sony Multiscan 100sf 15" Monitor	\$364.17
06687 Sony Multiscan 200sf 17" Monitor	\$771.56
06689 Sony Multiscan 200sf 17" Monitor	\$669.11
82688 Sony Multiscan 300sf 20" Monitor	\$1624.00

ViewSonic

87259 ViewSonic 17EA Multimedia Monitor	\$614.54
88429 ViewSonic 17GA Monitor	\$641.89
23486 ViewSonic 17GS 17" Monitor	\$594.89
82695 ViewSonic G800 20" Monitor	\$1117.00
29932 ViewSonic PT770 17" Color	\$739.44



Global Village Teleport 28.8 Fax/Modem Factory Refurbished

- 33.6 Kbps – blazing fast!
- Call Sensing – take fax and voice calls on the same line as your answering machine
- GlobalFax software for fast, easy faxing
- Complete address book

Global Village #82065

Call MAC BARGAIN\$ before you buy!
1-800-407-7404

Add applicable sales tax (only in OH, WA). All shipments refer to "in stock" items, barring system failure, etc. Not responsible for typographical errors. Credit cards are not charged until the order is shipped. Most products ship the same day. Shipping options include Ground, 2nd Day and Overnight Delivery. Freight is based on an average product weight. Handling extra. Insurance available. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand.

Overnight Delivery Available



DISCOUNT PRICES ON QUALITY HARDWARE, SOFTWARE & ACCESSORIES

For the Best Deals Around!

1-800-407-7404



Video Cards

Connectix

85317	Connectix Color QuickCam for Mac	\$222.19
92884	Connectix QuickCam for Macintosh	\$93.61

UMAX
The Magic of Color™



Astra 600S

- Lowest price for 30-bit scanning
- Large, legal-size scanning area
- Superior 30-bit color quality

UMAX #80679

Only
\$249.98

Radius

84143	Radius Thunder 3D Video Card	\$2950.00
90920	Radius Video Vision Studio PCI	\$3235.00

Accelerators

Adaptec

84834	PowerDomain 2940UW Kit SCSI-2 PCI	\$299.98
-------	-----------------------------------	----------

FWB

94121	FWB SCSI Jackhammer	\$434.64
-------	---------------------	----------

Microtech

34520	Blue Lightning PCI SCSI Accelerator	\$329.99
-------	-------------------------------------	----------

Modems

Boca

82765	FastMac V.34 33.6 FaxModem	\$102.27
-------	----------------------------	----------

Global Village

89312	PowerPort Platinum Pro V.34/10-T PC Card	\$425.48
89313	PowerPort Platinum V.34 PC Card	\$263.89
82575	TelePort Internet Edition	
	33.6 FaxModem	\$166.65
82574	TelePort SpeakerPhone Ed. 33.6 Voice	\$244.89

Megahertz

86528	CruiseCard Cellular Ready XJack	
	288 Mac	\$229.99

Supra

83465	Supra FAXModem V.34 33.6 Ext. Mac	\$183.07
83856	Supra Express 336e External	\$119.89

US Robotics

93701	Mac & Fax Sportster 14.4 Fax/Data Modems	\$55.53
92953	Mac & Fax Sportster 28.8 V.34	\$166.59
87406	Mac Sportster Voice v.34 28.8	\$193.23

Storage

LaCie

82194	LaCie Fireball TM 1.280GB Ext SCSI HD	\$349.98
82193	LaCie Fireball TM 1.280GB Int SCSI HD	\$269.98
81241	LaCie Fireball TM 2.16GB SCSI Int HD	\$338.30
89878	LaCie IQ 2160MB Internal HD	\$363.52

MicroTech

86174	MicroTech 200MB SyQuest External Drive	\$364.89
81085	Polaris II 1GB Ext HD	\$349.98
89619	Road Runner 500MB PowerBook Drive	\$511.36
89641	Road Runner 800MB PowerBook Drive	\$625.00

Performantz

78372	Performantz 12x CD Drive	\$239.99
-------	--------------------------	----------

VST

87426	VST Expan Bay 230MB MO Drive I/PB 190/5300	\$399.06
-------	--	----------

Media

Fuji

94094	FUJII 3.5" MF2HD Mac Formatted 10-Pk 1.4MB	\$5.20
-------	--	--------

91952	FUJII CDR-74	\$7.80
-------	--------------	--------

05717	Fuji DG90M 4mm Data Grade Tape 1.95GB	\$6.49
-------	---------------------------------------	--------

Iomega

97291	Bernoulli MultiDisk 150MB Single Cart	\$94.49
91160	Zip Media Mac100 - 3-Pack	\$49.99
91161	Zip Media Mac100 - 10-Pack	\$149.99
91159	Zip Media Mac100 Single	\$17.64

Kyocera

86251	Kyocera CDR-74	\$7.79
-------	----------------	--------

Performantz

83415	Performantz 200MB Cart	\$49.98
83416	Performantz 88MB Cart	\$31.69
40359	Performantz SyQuest Comp E2135MB Cart	\$17.99

Philips

89805	Philips CD-Recordable 74 Min Disk	\$7.80
-------	-----------------------------------	--------

Sony

01140	Sony 3.5" 230MB M.O. 512b/s	\$15.66
14368	Sony CD-R 650MB 74 Min Disk	\$6.54
86838	Sony SRS-91 Speakers	\$129.42
32804	Sony SRS-PC21 PC Speakers	\$22.16

EPSON

Only
\$299.98



Stylus Color 600

- Brilliant photo-quality 1440 dpi!
- QuickDry fast-drying inks
- Up to six ppm black or four ppm color

EPSON #80667

SyQuest

00278	SyQuest 200MB 5.25" Removable Cartridge	\$65.59
97992	SyQuest 270MB 3.5" Removable Cartridge	\$52.29
02183	SyQuest 44MB Cart Unformatted	\$42.29
00183	SyQuest Cart 80MB	\$45.59
24910	SyQuest EZ135MB 3.5" Cartridge - 10-Pk	\$198.89
24909	SyQuest EZ135MB 3.5" Cartridge - 5-Pk	\$109.99

Verbatim

21922	Verbatim CD-R 74min 4x	\$6.55
-------	------------------------	--------

Scanners

AGFA

02135	AGFA Arcus II Scanner, Mac Version	\$1595.00
89851	AGFA StudioScan IISI Color Scanner	\$428.00
06686	AGFA StudioStar	\$995.00
06685	AGFA StudioStar LE	\$811.46

Epson

91939	Epson ES-1000C Flatbed	\$575.51
82673	Epson Expression 636 Professional	\$1778.00
82671	Epson Expression 636 Executive	\$858.88
82659	PhotoPC 500 Color Digital Camera	\$453.11

Microtek

06673	ScanMaker E3	\$187.22
06672	ScanMaker E6 Standard	\$340.00
78922	ScanMaker III w/TMA	\$1398.00

UMAX

80679	Astra 600S	\$249.00
81853	Powerlook 2000 Scanner	\$3892.00
83509	Powerlook II w/Full Photoshop	\$1359.00
83507	Vista-S12 w/Adobe Photoshop	\$597.98

Viewsonic

86783	PaperPort Vx SCSI Adapter for Mac	\$63.60
78931	Viewsonic PaperPort Vx w/SCSI Cable	\$275.84

Input

Adesso

91854	Adesso Soft Touch Keyboard	\$44.09
90766	Tru-Form Extended Keyboard	\$73.18
85594	Tru-Form Extended Keyboard w/Touchpad	\$90.91

Apple

93374	Design Keyboard	\$84.49
94461	Extended Keyboard II	\$154.49

Calcomp

91862	Drawing Slate II 12x12" w/Pressure Pen	\$304.22
-------	--	----------

91869	Drawing Slate II 12x18" w/Pressure Pen	\$494.94
-------	--	----------

91864	Drawing Slate II 6x9" w/Pressure Pen	\$171.78
-------	--------------------------------------	----------

Gravis

89394	Advanced Gravis FireBird for Mac	\$63.07
05998	Gravis MouseStick II	\$40.39

Kensington

89379	Kensington Mouse 1.0	\$54.31
93628	Kensington Thinking Mouse ADB	\$63.17

Thrustmaster

95201	Thrustmaster Flight Control System	\$97.16
95200	Thrustmaster Weapons Control System	\$56.70

Wacom

90644	ArtPad II (ADB) w/Dabbler Bundle	\$147.63
90643	ArtPad II (ADB) w/Erasing UltraPen	\$133.77

90646	Artz II 12x12" (Serial) w/Erasing UltraPen	\$417.85
-------	--	----------

90645	Artz II 6x8" (ADB) w/Erasing UltraPen	\$301.72
-------	---------------------------------------	----------

Printers

Epson

90488	Multi-Protocol Ethernet Interface	\$382.02
80667	Stylus Color 600 Inkjet	\$299.99
80668	Stylus Color 800	\$449.99
87980	Stylus Color Pro XL Wide	\$1499.00
86318	Stylus Color 1500 Wide	\$799.00

Hewlett-Packard

89150	HP DeskJet 1600CM Color Printer	\$1925.00
86809	HP DeskJet 340CM Portable Printer	\$299.98
36156	HP DeskJet 870Cse InkJet Printer	\$499.99
88902	HP DeskWriter 600 Printer	\$149.99
86345	HP DeskWriter 680C InkJet Printer	\$209.99
82666	HP LaserJet 6MP Printer	\$930.02
13692	HP Tri-Chamber ColorPrint Cartridge	\$23.78

Surge/Back-up

American Power Conversion

94359	APC Back-UPS 200	\$88.57
07150	APC Back-UPS 280	\$95.99
99364	APC Back-UPS 400	\$141.11
05901	APC Back-UPS 450	\$172.30
11651	APC Back-UPS 600	\$238.52
94396	APC Personal Surge Arrest - 7 Outlet	\$14.97
94395	APC Personal Surge Arrest - 7 Outlet w/Phone	\$19.97
94393	APC Prof Surge Arrest - 7 Outlet w/Phone	\$32.42

Mobile Accessories

Battery Technology

87494	BTI 2-Slot Batt Chgr I/Int 5300/190 Battery	\$79.60
88751	BTI Auto Pwr Adpt I/PB 5300/190 Series	\$54.20
93648	BTI PB 100-180c Univ. Power Adapter	\$54.20
06641	BTI PB 140-180c Power Charger	\$79.60
85820	Internal 5300/190 Battery	\$79.60

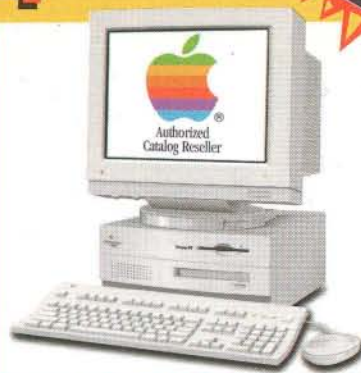
DoubleCase

88293	ZipPack Hard Case	\$30.31
-------	-------------------	---------

Targus

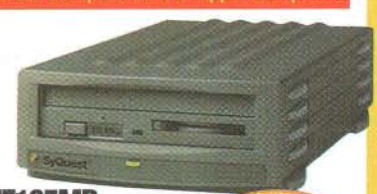
07720	Targus Premier Deluxe Leather Case	\$142.61
07454	Targus Universal PowerBook Case	\$59.32

CIRCLE 108 ON READER SERVICE CARD



Great Prices

on the Complete Line of Apple Computers



EZ135MB SCSI Removable HD Refurbished

Only
\$99.98*

- First cartridge included
- Weighs less than one pound!
- 13.5ms average seek time
- 2.4MB/sec maximum sustained data transfer rate
- Two-year manufacturer's warranty

SyQuest #81244

#24998 SyQuest EZ135 Cartridge\$19.95

ViewSonic®

Only
\$649.98*

Optquest V775 17" Monitor

- (16" viewable)
- 0.26mm dot pitch
- 1600x1280 maximum resolution
- Invar shadow mask for razor-sharp focus

ViewSonic #36197



WHY PAY MORE
when you can get a better price from **MAC BARGAINS\$?**

IF YOU DON'T SEE IT... CALL!

MAC BARGAINS\$®

FAX: 1-425-430-3520

E-Mail Address: mac.bargains@mzi.com

707 South Grady Way, Renton, WA 98055-3233

©1997 MZI, Inc. Renton, WA. All product names throughout this ad are trademarks of their respective holders. All rights reserved.

Our Knowledgeable Sales Advisors help make buying easy!

YOUR SOURCE CODE
BU706

DISCOUNT PRICES ON QUALITY HARDWARE, SOFTWARE & ACCESSORIES



THE LLB CO.

1.800.848.8967

International: 206.746.0229
Fax: 206.746.5168
Web Site: <http://www.llb.com>
email: sales@llb.com

Est. 1990

PB Memory

PB 3400	
128MB	\$1356
96MB	1005
64MB	519
32MB	346
24MB/16MB	180/120

PB 5300	
48MB	\$339
32MB/16MB	215/115
8MB	65

PB 500	
32MB/16MB	\$213/105
8MB/4MB	68/62

PB 2300	
48MB/36MB	\$449/225
32MB/20MB	250/159
16MB/8MB	119/51

PB 1400	
24MB	\$205
16MB	145
8MB	75

PB DUO	
DUO 36MB	\$265
DUO 28MB	219
DUO 20MB/12MB	179/99
DUO 8MB/4MB	75/49

PB 190	
32MB/16MB	\$219/139
12MB/8MB	108/69
4MB	55

PB 150	
28MB/20MB	\$235/179
14MB/8MB	115/69
4MB	53

Memory

DIMMS

128-PIN 60NS	
128MB 60NS	\$1232
64MB/32MB 60NS	365/195
16MB/8MB 60NS	95/55

NEW!

DIMMS EDO 5VOLT	
POWERBASE	
64MB 60NS	\$372
32MB 60NS	195
16MB/8MB 60NS	101/55

NEW!

DIMMS EDO 3.3VOLT	
STARMAX/GATEWAY	
64MB 60NS	\$384
32MB 60NS	205
16MB/8MB 60NS	101/55

72-PIN SIMMS

32MB 60NS	\$195
16MB 70/60NS	99/102
8MB 70/60NS	45/47
4MB 70/60NS	24/25

30-PIN SIMMS

16MB 70NS	\$124
8MB 70NS	79
4MB 80NS	28
2MB 80NS	18

Drives

QUANTUM	
IBM 1.2GB INT/EXT DRIVES	\$275/356
IBM 2.1GB INT/EXT DRIVES	385/440
ATLAS 4.3GB INT/EXT DRIVES	958/799
MICROTECH	
POWERBOOK HARD DRIVES	
PB RR1000 IDE 1GB 150/190/5300	\$445
PB RR2000 IDE 2GB 150/190/5300	779
PB RR5001 500MB INT SCSI2 2.5	559
PB RR8001 800MB INT SCSI2 2.5	699

Printers & Scanners

HEWLETT PACKARD	
4MV 16PPM 600 DPI LASER	\$2840
6MP 8PPM 600 DPI LASER	955
5L 4PPM 300 DPI LASER	515
DESKJET 855CXI 7PPM	509
DESKWRITER 680C MAC	319
APPLE	
COLOR LW 12/600	\$6465
LASERWRITER 16/600	2249
STYLEWRITER 1200 W/QD	215
COLOR STYLEWRITER 2200	399
COLOR STYLEWRITER 2500	375
UMAX	
MIRAGE ENGINE	\$5469
POWERLOOK ENGINE	1369
POWERLOOK W/TRANS ADPTR	1999
POWERLOOK 2000 ENGINE	2976
POWERLOOK II ENGINE	1505
VISTA S-12 SOHO BUNDLE	477
VISTA S-6 SOHO BUNDLE	287
EPSON	
STYLUS 600 INKJET	\$310
STYLUS 800 INKJET	466
STYLUS COLOR PRO XL	1799
LOCALTALK INTERFACE KIT	145
1200C PRO MAC SCANNER	1202
NIKON	
COOLSCAN II EXT LS/20	\$1125
SCANTOUCH AX-1200	1055
SCANTOUCH AX-210	739
SUPERCOOLSCAN LS	2049

WE CARRY ALL PRINTER SUPPLIES

VRAM & Cache

CACHE	
256k CACHE 6100/7100/8100	\$40
256k DIMM CACHE 7200/7500	64
512k DIMM CACHE 7200/7500	97
1MB CACHE CARD 7200	130
256k DIMM CACHE 5400/6360/6400	128
V-RAM	
256K V-RAM	\$15
512K V-RAM	20
1MB V-RAM PM7200/7500/8500	45
2MB V-RAM PM9500	79

Modems

US ROBOTICS	
SPORTSTER 33.6 V.34 INET BNDL	\$175
SPORTSTER 33.6 V.34 VOICE	265
SPORTSTER V.34 PC CARD	215
SPORTSTER 56K FAX MODEM	215
SUPRA	
#5033FX 33.6 V.34 FAX MODEM	\$199
#5033XP 33.6 V.34 FAX MODEM	127
#5033SS SUPRASONIC 33.6 VOICE	275
GLOBAL VILLAGE	
TELEPORT PLATINUM INET 33.6	\$179

Newer Technology

Maxpower 200MHz \$999

Maxpower 180MHz	\$832
Maxpower/DP 360MHz	1581
Maxpower/DP 400MHz	1787
Nupowr 200MHz(PB1400)	645
Nupowr 167 MHz 8MB	730
Nupowr 167 MHz 0MB	636

UMAX Systems

Supernac S900 L250 Tower	\$4735
Supernac S900 L233 Tower	4057
Supernac J700 L150 Desktop	2120
Supernac C600 L180 Minitower	1450

Zip Drive

with cartridge	
\$149	
*After mnfr Rebate	



SONY CDR
74 MIN 640MB
IO-PACK
\$73

Electronic Orders: E-Mail: sales@llb.com • Web Site: <http://www.llb.com> • PO's are accepted upon approval. • All major credit cards accepted & charged when order is shipped. • No surcharge on credit cards. • Prices subject to change, not responsible for errors. • We welcome International orders.

• Orders received before 8:00pm EST weekdays shipped same day. • Open 6am to 7pm M-F 9am to 4pm Sat. PST • Returns subject to 15% restocking fee.

The LLB Co., Inc. • 13228 NE 20th St., Suite B • Bellevue, WA 98005

You Can't Miss If You Call LLB For Your Motorola Systems

Starmax
4000/160
\$1740

Authorized
Reseller



MOTOROLA

MINI TOWERS

- Minitor w/PowerPC 604e Processor
- 160MHz Speed
- 32MB RAM expandable to 160MB
- 512K L2 Cache
- 2MB V-RAM upgradable to 4MB
- 2.5GB Hard Drive
- 8X Internal CD-Rom Drive
- Five PCI Expansion Slots

Starmax
3000/240
w/28.8 Modem
\$2200

- Minitor w/PowerPC 603e Processor
- 240MHz Speed
- 32MB RAM expandable to 160MB
- 512K L2 Cache
- 4MB V-RAM
- 2.5GB Hard Drive
- 8X Internal CD-Rom Drive
- Motorola 28.8 Data/fax Modem

Starmax
4000/160
\$1545

Starmax
3000/200
w/28.8 Modem
\$1726

- Minitor w/PowerPC 603e Processor
- 180MHz Speed
- 32MB RAM expandable to 160MB
- 256K L2 Cache
- 1MB V-RAM upgradable to 4MB
- 2.5GB Hard Drive
- 8X Internal CD-Rom Drive
- Motorola 28.8 Data/fax Modem

Starmax
3000/180
w/28.8 Modem
\$1446

Monitor Sold Separately

- Minitor w/PowerPC 603e Processor
- 200MHz Speed
- 32MB RAM expandable to 160MB
- 256K L2 Cache
- 1MB V-RAM upgradable to 4MB
- 2.5GB Hard Drive
- 8X Internal CD-Rom Drive
- Motorola 28.8 Data/fax Modem

Starmax
4000/200
\$2426

- Minitor w/PowerPC 604e Processor
- 200MHz Speed
- 32MB RAM expandable to 160MB
- 512K L2 Cache
- 2MB V-RAM upgradable to 4MB
- 2.5GB Hard Drive
- 8X Internal CD-Rom Drive
- Five PCI Expansion Slots

DESKTOPS

Starmax
4000/200
\$2225

- Desktop w/PowerPC 604e Processor
- 200MHz Speed
- 16MB RAM expandable to 160MB
- 512K L2 Cache
- 2MB V-RAM upgradable to 4MB
- 1.2GB Hard Drive
- 8X Internal CD-Rom Drive
- Three PCI Expansion Slots

Starmax
3000/200
w/28.8 Modem
\$1526

- Desktop w/PowerPC 603e Processor
- 200MHz Speed
- 16MB RAM expandable to 160MB
- 256K L2 Cache
- 1MB V-RAM upgradable to 4MB
- 1.2GB Hard Drive
- 8X Internal CD-Rom Drive
- Motorola 28.8 Data/fax Modem

Starmax
3000/180
w/28.8 Modem
\$1299

- Desktop w/PowerPC 603e Processor
- 180MHz Speed
- 16MB RAM expandable to 160MB
- 256K L2 Cache
- 1MB V-RAM upgradable to 4MB
- 1.2GB Hard Drive
- 8X Internal CD-Rom Drive
- Motorola 28.8 Data/fax Modem

Direct Education Line
for The LLB Co.

1-800-840-2212

Please Call Our Specialists
For All Your Mac & PC Needs



1-800-553-4230

Call Mac Xtra Now!

Fax • 206-746-5324 International • 206-746-3803

NEW EDO DIMMs

For Motorola StarMax & Gateway 200

8MB EDO 3.3volt -- \$62
16MB EDO 3.3volt -- 101
32MB EDO 3.3volt -- 205
64MB EDO 3.3volt -- 395

For Power Computing PowerBase Systems

8MB EDO 5volt -- \$59
16MB EDO 5volt -- 101
32MB EDO 5volt -- 205
64MB EDO 5volt -- 395

Powerbook Series

PB 500 Series
4MB -- \$62 8MB -- \$68
16MB -- 104 32MB -- 213

PB 2300 Series
4MB -- \$80 8MB -- \$106
16MB -- 119 20MB -- 159
36MB -- 265 48MB -- 329

PB DUO 190 Series
4MB -- \$59 8MB -- \$69
12MB -- 108 16MB -- 139
32MB -- 219

PB 3400 Series

8MB -- \$65 16MB -- \$120
24MB -- 180 32MB -- 346
64MB -- 519 96/128MB 1005/1356

PB 5300 Series

8MB -- \$65 16MB -- \$115
32MB -- 215 48MB -- \$45

PB 1400 Series

8MB -- \$75 12MB -- \$130
16MB -- 139 24MB -- 208
32MB -- 239

<http://www.mactra.com>

CIRCLE 23 ON READER SERVICE CARD

VRAM

•VRAM•

256K 80NS V-RAM \$15
512K VRAM 20
1MB V-RAM (DIMM) 39
2MB V-RAM (DIMM) 79

•CACHE•

256K Cache 61/71/8100 \$40
512K Cache 61/71/8100 220
256K DIMM Cache 64
512K DIMM Cache 119

PB Accessories

Nupowr 200Mhz/1400 -- \$645
Nupowr 167Mhz 8MB -- 780
Nupowr 167Mhz 0MB -- 636
VST PB5300 Bat/Chrg -- 329
Apple PB500 PC Upgr -- 1229
Int. Battery pk 140/180 -- 59
PB2300 Int. Battery -- 99

72-Pin SIMMs

For G 605/630, 610, 650, 700, 800-840AY,
LCIII/475/630, PERF 450-560/575 / 611BCD,
PMAC 61/71/8100
WS90/60/95/150/81/9150

4MB 70NS/60NS -- \$24/25
8MB 70NS/60NS -- 45/47
16MB 70NS/60NS -- 99/102
32MB 60NS -- 192

PC SIMMs

4MB 70NS/EDO --- \$35/38
8MB 70NS/EDO --- 57/43
16MB 70NS/EDO --- 106/95
32MB 70NS/EDO -- 235/190

Accelerators

Newer Technology

Maxpower 180Mhz 7500/8500/9500 --- \$832
Maxpower 200Mhz 7500/8500/9500 --- 1015
Maxpower 360Mhz Dual Processor --- 158
Maxpower 400Mhz Dual Processor --- 1581
1787

168-Pin DIMMs

For PM 9500, 8500, 7500, 7200

8MB --- \$55
16MB --- 95
32MB --- 195
64MB --- 399

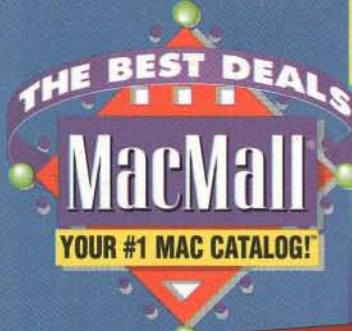


Mac Xtra

Prices subject to change without notice.
Not responsible for errors.

Overnight Del. \$7.50 and UPS ground \$6 & up
Returns subject to approval & restocking fee

Mac Xtra • 1075 Bellevue Way NE, Ste. 114
Bellevue, WA 98004



PageMaker 6.5 Upgrade CD w/FREE PageTools SE While supplies last \$99⁹⁹! #88274	ClarisWorks 4 Internet Edition Includes: ClarisWorks 4.0, Apple Internet Connection Kit & Claris Home Page 2.0 \$99⁹⁹! #89404	Conflict Catcher 4 NEW VERSION! \$64⁹⁹! #91328	Live Picture 2.5 CD NEW LOW PRICE! While supplies last \$194⁹⁹! #81985	Speed Doubler After 2 mail-in upgrade \$24⁹⁹! #86424
--	---	---	--	--

MacMall has it all

MacMall DEALS

MEDIA

- Sony CD Recordable Media..... **7** #82025
 Fuji Zip Cartridge 10pk as low as **11** (per disk) #88261
 *after '20 mail-in rebate
 1.4MB Mac diskette - 100pk
 *after '30 mail-in rebate..... **14** #88268

UTILITIES

- Spring Cleaning..... **49** #85741
 RAM Doubler 2..... **49** #82525
 SoftWindows 95 4.0
 Upgrade from 1.0..... **99** #91320

GRAPHICS

- 3D Web Workshop w/Adobe
 PageMill CD Mac/PPC..... **148** #80613
 mTropolis 1.1 Complementary
 Upgrade..... **494** #88929
 QuarkXPress 3.3.2 CD w/FREE QXTools SE and
 QuarkXPress for Dummies Book... **649** #90659

BUSINESS

- Street Atlas USA 3.0/Phone Search USA 2.0
 *after '20 mail-in rebate..... **38** #79852
 Quicken 7..... **39** #84357

ENTERTAINMENT SOFTWARE

- Bricks..... **29** #82866
 Marathon Infinity..... **37** #81434
 Star Trek: Judgement Rites..... **38** #79603

ENTERTAINMENT HARDWARE

- Trackman..... **14** #83846
 FM Radio Tuner..... **49** #88393
 BlackHawk Joystick..... **59** #85859
 Thinking Mouse..... **69** #66745

Only From MacMall!

MacMall Exclusive!
FREE DataSaver Backup Software and FREE NetComplete Internet Kit
 with any Iomega Zip or Jaz Drive order

Iomega Zip Drive **Iomega Jaz Drive**

NEW LOW PRICE!
\$149⁹⁹! **\$499⁹⁹!**

#90177 #90174

Sony Zip Disk as low as **12** #90222 Jaz Disks as low as **89** #74545

Regular price '19' #90222 Jaz Disks as low as '89' #74545

UMAX

SUPERMac C600/180
 > 180MHz Power PC 603e processor
 > 16MB RAM
 > 1.2GB Hard Drive
 > 8X CD-ROM Drive
 > Mini-Tower Case
 > 33.6Kbps Modem

Monitor sold separately #90591 **\$1499!**

SUPERMac S900L/180
 > 180MHz Power PC 604e
 > 32MB RAM
 > 2.0GB Hard Drive
 > 8X CD-ROM Drive
 > 4MB VRAM
 > Full-Size Tower Case

Monitor sold separately #90583 **\$3199!**

MOTOROLA

StarMax 3000 DT/200
 > 200MHz Power PC 603e processor
 > 16MB RAM
 > 1.2GB Hard Drive
 > 8X CD-ROM Drive
 > 28.8Kbps Modem
 > 256K Cache

Monitor sold separately #90620 **\$1495!**

StarMax 4000 DT/160
 > 160MHz Power PC 604e
 > 16MB RAM
 > 1.2GB Hard Drive
 > 8X CD-ROM Drive
 > 512K Cache

Monitor sold separately #90623 **\$1595!**

PowerComputing

PowerCenter 150 LP
 > 150MHz Power PC 604
 > 16MB RAM
 > 1.0GB Hard Drive
 > 8X CD-ROM Drive
 > 512K Cache
 > Low Profile Case

Monitor sold separately #90613 **\$1695!**

PowerTower Pro/200
 > 200MHz Power PC 604e
 > 16MB RAM
 > 2.0GB Hard Drive
 > 8X CD-ROM Drive
 > 1MB Level 2 Cache
 > 8MB VRAM

Monitor sold separately #90597 (While supplies last) **\$2695!**

SyJet 1.5GB Removable Drive **NEW!**
\$499⁹⁹! #81323
 SyJet 1.5GB Cartridge as low as **99** #84862
 *When ordered in qty's of 10+

MCA-S600C Color Scanner **NEW!**
\$299⁹⁹! #91230
MITSUBISHI

HP DeskWriter 600 Printer
\$149⁹⁹! #73683
 HP DeskWriter 600 w/Cardshop Plus!
 Deluxe & Color Kit **199** #90739

Arriva 2GB Drive
\$399⁹⁹! #82914
 External Version
 Arriva 2GB Int. HD **349** #85057

Palm Pilot Personal Edition
\$298⁹⁹! #88146
 U.S. Robotics Palm Pilot
 Professional Edition **398** #88147

ORDER TODAY GET IT TOMORROW by 10:30 a.m. OPEN 24Hours

**Director 6
Multimedia Studio**

UPGRADE!
\$489⁹⁹!
#91223

**Adobe
Photoshop 4.0**

w/FREE Collage 2.0
& TextureScope 2.0
While supplies last
\$139⁹⁹!
#91233

**Omni Page
Pro 7.0 Upgrade**

w/any scanner
purchase
\$99⁹⁹!
#89834

**Mac OS 7.6
CD Upgrade**

*Requires proof of ownership
of 7.5.3
\$68⁹⁹!
#78343

**Order
And
Register to**



**Win a NEW
Mercedes SLK!**

Call us for details. No purchase necessary.

...FOR LESS!

SUPER SYSTEM SAVINGS!

**33.6 Fax Modem
w/SpeakerPhone**

\$99⁹⁹!
#88140

*with any purchase over
\$100 from MacMall

**MICROTEK
ScanMaker E3**

**HOT NEW
PRICE!**
\$199⁹⁹!
#78323

**HOTTEST
MEMORY
DEALS!**

Ask for
your free
copy of Decent*

8MB SIMM \$49 #4177
16MB SIMM \$99 #65416
32MB SIMM \$199 #65417

*with any memory purchase
from MacMall

**Microsoft
Front Page 1.0 CD**

\$139⁹⁹!
#92299

**EZ Flyer 230MB
External SCSI
Removable Drive**

\$239⁹⁹!
#82063
**230MB Cartridge
as low as \$23** #82064
*When ordered in qty of 10+

**MOTOROLA
StarMax 3000 DT/180**

► 180MHz Power PC 603e processor
► 16MB RAM
► 1.2GB Hard Drive
► 8X CD-ROM Drive
► 28.8Kbps Modem
Monitor sold separately

NEW LOW PRICE!
\$1249⁹⁹!
#90618

**MOTOROLA
StarMax 4000 DT/160**

► 160MHz Power PC 604e
► 16MB RAM
► 1.2GB HD
► 8X CD-ROM Drive
► 512 L2 Cache
Monitor sold separately

NEW LOW PRICE!
\$1595⁹⁹!
#90623

**UMAX[®]
SUPERMac C500/180**

► 180MHz Power PC 603e processor
► 16MB RAM
► 1.2GB Hard Drive
► 8X CD-ROM Drive
► 256K Level 2 Cache
Monitor sold separately

\$1299⁹⁹!
#91403

PowerComputing

PowerBase 180LP
► 180MHz Power PC 603e
► 16MB RAM
► 1.2GB HD
► 8X CD-ROM Drive
► 2MB VRAM
► Low Profile Case

NEW LOW PRICE!
\$1295⁹⁹!
#90605

Four reasons why MacMall is the best choice for all your computing needs:

FedEx THE FASTEST OVERNIGHT DELIVERY AVAILABLE

A MacMall Exclusive! Call as late as 11:00 p.m. EST and get your order by 10:30 a.m. the next day via FedEx Priority Overnight.

CUSTOM CONFIGURATION
Have the system you want, custom-configured by our factory-trained technicians.

EXCLUSIVE DEALS & SPECIAL OFFERS
We ALWAYS give you more for your computing dollar.

OVER 22,000 PRODUCTS
You can count on us to have the products you want when you want them!

MacMall

PRICE WAR EXCLUSIVE!

WE'LL BEAT ANY CPU PRICE!

DRAMATIC SAVINGS ON SOFTWARE!

Zip Drive 100MB External \$149⁹⁹!

Apple Macintosh Performa 6360 \$1399⁹⁹!

UMAX SUPERMac C500/180 \$1299⁹⁹!

PowerComputing PowerBase 180LP \$1295⁹⁹!

MOTOROLA StarMax 4000 DT/160 \$1595⁹⁹!

OPEN TODAY! GET IT TODAY! BY 10:30 a.m. OPEN ALL DAY!

1-800-222-2808

Get your FREE issue today!

Please check issue(s) you wish to receive.

☐ MacMall[®] ☐ PC Mall ☐ DataCom Mall

Name _____

Address _____

City _____

State _____ Zip _____

Mail to: MacMall, Dept. ADV., 2645 Maricopa St., Torrance, CA 90503

MacMall[®]
Place Your Order 24 Hours a Day
1-800-217-9498

Priority Code: MacUser ZMUS761

**Sportster 56Kbps
Fax Modem**

**NEW!
56Kbps**
\$217⁹⁹!
#90634

**155X 15" Color
Monitor (refurbished)**

\$279⁹⁹!
#91410
SONY
**SFL 15" Color Monitor
(refurbished) \$299⁹⁹!** #91531

**Arriva 12X External
CD-ROM Drive**

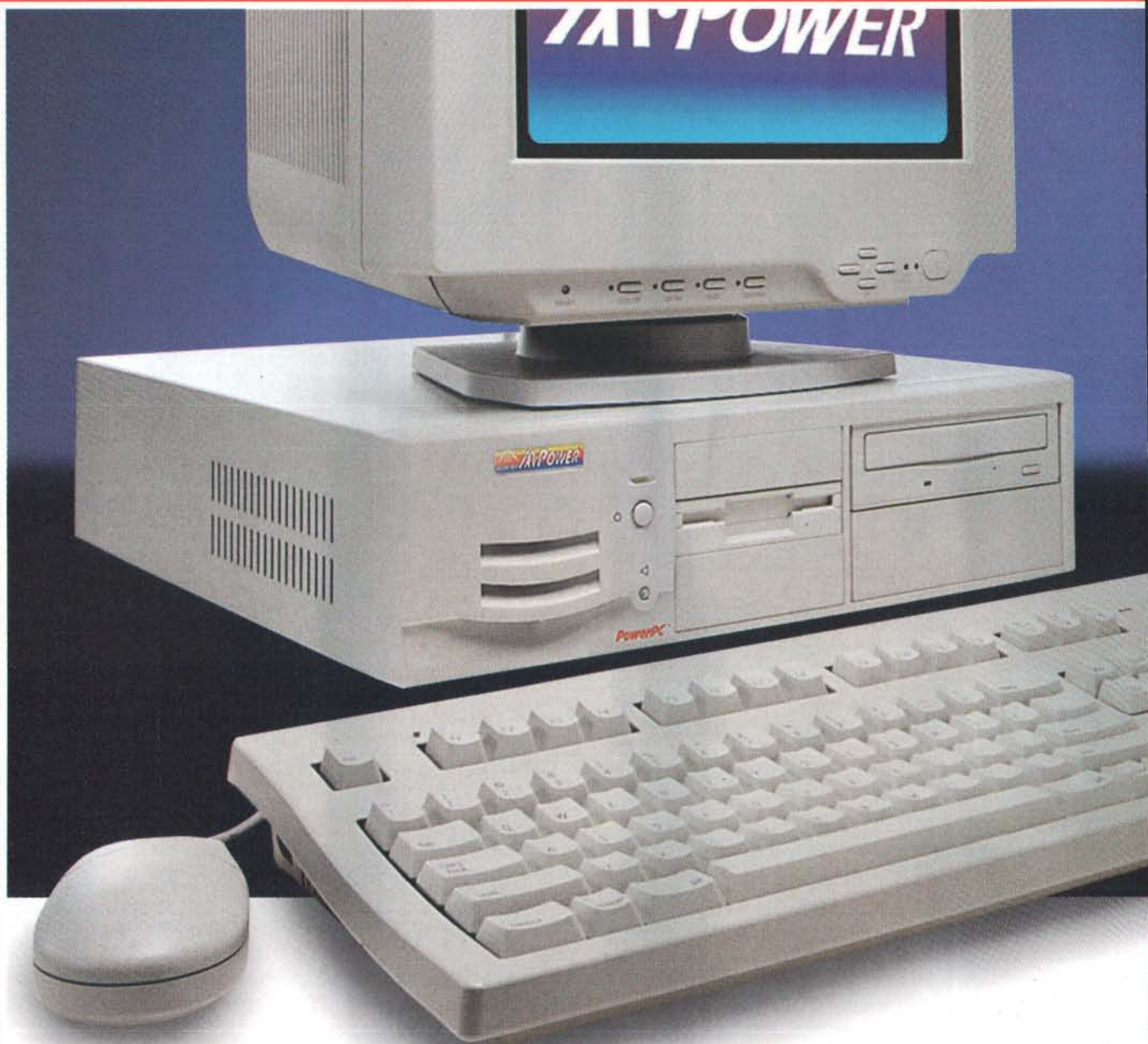
\$199⁹⁹!
#87873
**12X CD-ROM
Drive with
A-10 Software
Bundle \$219⁹⁹!** #92191

**Stylus Color
600 Printer**

\$299⁹⁹!
#90224
**Stylus Color 800
Printer \$449⁹⁹!** #90225

IMPORTANT: While we do our best to check errors, mistakes may occur-call to verify pricing.

APS TECHNOLOGIES:



JUST THE RIGHT CAPACITY!

APS Q 2100

- MR heads, PRML and Ultra SCSI Technology
- Reliable 4500 rpm mechanism
- Works on SCSI-2 and Ultra SCSI buses

Give your Mac the extra storage space it needs by installing the new APS Q 2100. At only 15¢ per MB internal, the APS Q 2100 is the value leader in 2GB SCSI hard disk drives.



Quantum **\$299⁹⁵** Internal configuration

MIND-BLOWING 4.3 GIG DELIVERS

APS WD 4300

- Time tested 7200 rpm
- Ultra SCSI interface with a 5 year warranty

Put this 7200 rpm dynamo on your desktop, get ready for action. It delivers over 4GB of formatted capacity to quench the thirst of your data needs. Combining a 512K cache buffer and an Ultra SCSI interface, this drive is perfect for heavy duty storage on just about any PowerPC system.

WESTERN DIGITAL

\$799⁹⁵ Internal configuration

BEST VALUE IN CD-R!

APS CD-R Plus

- 2X record, 6X read mechanism
- Your choice of Toast,

Discribe or Retrospect 2X recording and 6X CD-ROM playback, makes this drive ideal for creating multimedia CDs or backing up a hard disk drive at double speed. The APS CD-R Plus includes your choice of Toast, Discribe mastering software or Retrospect backup software.



\$499⁹⁵ External configuration



THE NAME TO REMEMBER IN MAC COMPATIBLE PRODUCTS

Software Now Included FREE
with APS M•POWER systems

- Claris Works®
- Claris Organizer™
- Claris Home Page®
- Macintosh System 7.5.3 or later
- Nisus® Writer 4.1
- PowerMerge LE
- DiskFit Direct™
- QuickMail™ Express
- Web Arranger 30-day trial
- QuickKeys 30-day trial

The APS M•POWER Line of High Performance Mac OS Computer Systems!

ASK US
FOR THIS
WEEK'S
M•POWER
VALUE SYSTEM!

APS M•POWER 603e180™ comes with these appointments: 180MHz Motorola® PowerPC 603e processor • 1.2GB hard drive • 12X CD-ROM • 16MB of DRAM • 1MB of VRAM • Desktop enclosure w/3 PCI slots • 2 year parts & labor warranty. **Just \$1199***

APS M•POWER 603e200™ comes with these appointments: 200MHz Motorola® PowerPC 603e processor • 1.2GB hard drive • 12X CD-ROM • 16MB of DRAM & 256K L2 Cache • 1MB of VRAM • Desktop enclosure w/3 PCI slots • 2 year parts & labor warranty. **Now \$1499***

APS M•POWER 603e240™ comes with these appointments: 240MHz Motorola® PowerPC 603e processor • 2.5GB hard drive • 12X CD-ROM • 24MB of DRAM & 256K L2 Cache • 1MB of VRAM • Tower enclosure w/5 PCI slots • 2 year parts & labor warranty. **Only \$1799***

APS M•POWER 604e200™ comes with these appointments: 200MHz Motorola® PowerPC 604e processor • 2.5GB hard drive • 12X CD-ROM • 24MB of DRAM & 512K L2 Cache • 2MB of VRAM • Tower enclosure w/5 PCI slots • 2 year parts & labor warranty. **Just \$1899***

STANDARD EQUIPMENT: All M•POWER systems are generously outfitted with a floppy drive, ADB keyboard, ADB mouse, printer port, modem port, ADB port, SVGA monitor port (supporting 14", 15", 17" & 21" monitors), 2 PS/2 ports, SCSI port, IDE bus, ATAPI bus, 16-bit sound output port, rear headphone jack and a microphone jack to make computing much more enjoyable. All M•POWER systems are ready to grow with you – the M•POWER 603e180 and the 603e200 desktop systems have four internal bays, while the M•POWER 603e240 and the 604e200 tower systems have eight internal bays. These features and many more make the APS M•POWER systems the best value in Mac computing.



Build Your Own Box: Base systems start as low as **\$849***

*Monitors are not included. Filling all available drive bays may exceed power limitations.

Motorola and Motorola logo are registered trademarks of Motorola, Inc. PowerPC is a trademark of International Business Machines Corp. and is used by Motorola, Inc. under license from International Business Machines Corp. Microsoft is a trademark of Microsoft Corporation. Windows NT is a registered trademark of Microsoft Corporation. ADK is a registered trademark of International Business Machines Corp. Mac OS is a registered trademark of Apple Computer, Inc. APS and APS Technologies are registered trademarks of Alliance Peripheral Systems, Inc. Other brand or product names are registered trademarks or trademarks of their respective holders. Prices and specifications are subject to change without notice.

APS DESKTOP DRIVES

Model	Capacity	Internal	SR2000
APS Q 1280 Quantum Fireball™	1222MB	\$229 ⁹⁵	\$299 ⁹⁵
APS Q 2100 Quantum Fireball™	2014MB	299 ⁹⁵	379 ⁹⁵
APS Q 3200 Quantum Fireball™	3067MB	399 ⁹⁵	479 ⁹⁵
APS I 4300 IBM DCAS - 4330	4137MB	599 ⁹⁵	649 ⁹⁵
APS Q 4300 Quantum Atlas II	4341MB	899 ⁹⁵	949 ⁹⁵
APS WD 4300 Western Digital Enterprise	4157MB	799 ⁹⁵	849 ⁹⁵
APS Q 9000 Quantum Atlas II	8682MB	1499 ⁹⁵	1549 ⁹⁵
APS Powerbook Drive	1000MB	599 ⁹⁵	NA

APS REMOVABLE DRIVES

Model	Capacity	Internal	SR1000	SR2000
APS M540 (with 1 cartridge)	515MB	N/A	N/A	\$249 ⁹⁵
APS 230 MO	217MB	\$299 ⁹⁵	299 ⁹⁵	379 ⁹⁵
APS 640 MO	606MB/ New 2MB cache	N/A	N/A	599 ⁹⁵
APS SQ 5200	190MB	N/A	N/A	389 ⁹⁵
APS Jaz (with 1 cartridge)	1GB	N/A	\$399 ⁹⁵	499 ⁹⁵
APS Jaz (with 3 cartridge)	1GB	N/A	599 ⁹⁵	599 ⁹⁵

Call for a complete list of available
APS Hard, Removable, Tape Backup and CD-Rom Drives.

APS TAPE BACKUP DRIVES

Model	Capacity	Internal	SR2000
APS HyperQIC™ Travan 4 Conner QIC 3095	8GB	\$349 ⁹⁵	\$399 ⁹⁵
APS HyperDAT™ DDS-2 DC	8GB	749 ⁹⁵	799 ⁹⁵
APS HyperDAT™ Pro DDS-2 DC	8GB	849 ⁹⁵	899 ⁹⁵
APS HyperDAT™ III DDS-3 DC	24GB	NA	1199 ⁹⁵

APS CD DRIVES

Model	External
APS CD12 12X CD-ROM in Slimline case	\$159 ⁹⁵
APS CD-R Plus 2X6 CD-R	499 ⁹⁵

* 30-day money-back satisfaction on all APS brand drives and accessories. Your risk is the cost of shipping. 30-day money-back guarantee does not apply to M•POWER systems. Two year limited warranty on M•POWER systems. Monitors carry separate warranty from their respective manufacturers. * SCSI cables sold separately.
* Drive-for-Drive Repair or Replacement Warranty. APS will, at its discretion, replace or repair products found to be defective according to the terms of the product's warranty. * Refund orders subject to 20% restocking fee. * International customers must pay for all shipping charges. * Listed capacities are formatted.
* Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment. * Prices and specifications are subject to change without notice. * You need to install system software appropriate to your machine before using our hard drives. * Not responsible for typographical errors.
* © 1997, Alliance Peripheral Systems, Inc. All Rights Reserved. Computer case may not exactly match images shown.



Visa, MasterCard, Discover, American Express: No Surcharge
Same day shipping for personal checks (Restrictions apply)

Call 800-289-5385

Visit our Web Page at <http://www.apstech.com/>
International Sales: (816) 920-4109

CIRCLE 148 ON READER SERVICE CARD

APS
Technologies

\$0 Down 100% Business Financing NO Payments for 90days



New UMax, Motorola, 9600, 8600, 7300, and 4400 Available!

Ultimate 9600/200MP Graphics and Marketing SuperStation

Are you in the market for a Hi-End graphic system and tired of not knowing what to get? Digital GraphiX has done the work for you and has designed the Ultimate Graphics system. You get everything you need to meet your demanding design deadlines.



Go Custom

We cater to marketing and advertising professionals, printing shops, service bureaus, multimedia, digital imaging, and CAD/CAM professionals. Our Business is knowing your mac system needs. We will custom configure to your specifications!

Specifications

- PowerMac 9600-200 Multiprocessor
- 4GB Hard Drive & 12xCD ROM
- 272MB RAM
- 8GB int. FWStripped Disk Array
- Adaptec Disk Array Controller/SW
- IMS Twin Turbo 8MB PCI Video Card
- Viewsonic P810 21" Trinitron Monitor 1600x1200
- Epson Stylus Color Pro XL 11x17 wide color printer, E-Net, PSRip
- IOMega JAZ 1GB with 1 cartridge
- Microtek ScanMaker III with Transparency and Full Photoshop
- GCC XL 808 800dpi, 11x17 Printer, E-Net, Cables/Con
- 12x12 Graphics Tablet



FreeHand v5.5
With Every GraphiX System Lease

\$359 Value Features

This system can handle all of your in-house publishing chores, printing 11x17 in both BW and color, scanning, and back up of your files onto a JAZ cartridge. We even give you all of the ethernet cables and connectors for hi-performance printing. The IMS 8MB Video card provides the fastest accelerated display of your hi-resolution images. With a built-in Fast & Wide 8GB Array, the Ultimate Graphics SuperStation is the fastest system available today for a low monthly payment of:

Only \$459

per Month

Base 9600MP
Starting at
\$3,599

9600/200 Realtime Digital Video Capture SuperStation

Specifications

- PowerPC 9600/200MHz
- 4GB Hard Drive & 12xCD ROM
- 160MB RAM
- 18GB Internal Stripped Disk Array
- 2x Adaptec Disk Array Controller/Remus LE SW
- IMS 8MB PCI Video Card
- Viewsonic P810 21" and Viewsonic 17EA
- Yamaha 4x/6x CDR with Toast Software
- 20 x 74minute CDR Media
- IOMega JAZ 1GB with 1 cartridge
- TrueVision Targa 2000 PCI Video Capture
- Adobe Premiere 4.2 Video SW
- Sony 8GB DAT tape Backup

Features

This system can handle all of your in-house video capture chores. View video on one monitor and execute your premiere on the other. Capture video at 60 frames per second (Never miss a frame) on your dual channel Fast/Wide SCSI Raid Level 0 24MB per second Array. Store all of your video on your 650MB 74min CDRs, transfer your files with a JAZ cartridge, and backup all your work with a 8GB Sony SDT-5000 DAT tape drive. We even provide you with Macromedia Director and Adobe Premiere Software. This System is the best video system available today for a low monthly payment of:

Only \$399

per Month

9600/200
Base System
Starting at:
\$2,499



Real Time Video Capture

UMAX & Motorola Systems



UMAX
Computer Corporation

SUPERmac

- Up to 250MHz
- Multiprocessor Upgradeable
- Free Modem

\$900L 225MHZ
Only \$3,549

UMAX System Description

SuperMac C600L 180MHz 603e, 16MB RAM, 1.2GB HD, 8xCD, 28.8 Modem, Minitor	\$1489	\$33.65
SuperMac C600L 200MHz 603e, 16MB RAM, 2.1GB HD, 8xCD, 28.8 Modem, Minitor	\$1789	\$40.43
SuperMac C600L 240MHz 603e, 24MB RAM, 2.1GB HD, 8xCD, 28.8 Modem, Minitor	\$2089	\$47.21
SuperMac J700L 180MHz 604e, 24MB RAM, 2.1GB HD, 8xCD, IMS 2MB Video, Minitor	\$2489	\$56.25
SuperMac S900L 180MHz 604e, 32MB RAM, 2.1GB HD, 8xCD, IMS 4MB Video, Tower	\$3189	\$72.07
SuperMac S900L 200MHz 604e, 32MB RAM, 2.1GB HD, 8xCD, IMS 4MB Video, Tower	\$3389	\$76.59
SuperMac S900L 225MHz 604e, 32MB RAM, 2.1GB HD, 8xCD, IMS 8MB Video, Tower	\$3549	\$79.85
SuperMac S900L 233MHz 604e, 32MB RAM, 2.1GB HD, 8xCD, IMS 8MB Video, Tower	\$4189	\$94.67
SuperMac S900L 250MHz 604e, 32MB RAM, 2.1GB HD, 8xCD, IMS 8MB Video, Zip, Tower	\$4889	\$110.49
SuperMac S900L DP 180MHz 2-604e, 32MB RAM, 2.1GB HD, 8xCD, IMS 4MB Video, Tower	\$3889	\$87.89
SuperMac S900L DP 200MHz 2-604e, 32MB RAM, 2.1GB HD, 8xCD, IMS 4MB Video, Tower	\$4489	\$101.00

Motorola StarMax System Description

StarMax 4000 160MHz 604e, 16MB RAM, 1.2GB HD, 8xCD, 2MB VRAM, 512K, Desktop	\$1549	\$34.85
StarMax 4000 160MHz 604e, 32MB RAM, 2.5GB HD, 8xCD, 2MB VRAM, 512K, Minitor	\$1749	\$39.53
StarMax 4000 200MHz 604e, 16MB RAM, 1.2GB HD, 8xCD, 2MB VRAM, 512K, Desktop	\$2239	\$50.60
StarMax 4000 200MHz 604e, 32MB RAM, 2.5GB HD, 8xCD, 2MB VRAM, 512K, Minitor	\$2439	\$55.12



NEW BUSINESS Financing Available!

Digital GraphiX 800-680-9062

Your Value Added Macintosh Source

Low Prices

30,000 Products on the Internet

<http://www.DigitalGraphiX.com>



**FreeHand
v5.5**

With Every Graphix
System Lease

FREE!
\$359 Value

ULTIMATE DESIGNERS SPECIAL

- PowerMac 8600/200
- 12X CD ROM
- 64MB RAM
- 4GB internal hard drive
- Extended keyboard
- Sony 20SF II monitor
- ATI Xclaim PCI Graphics 4MB
- Microtek Scanmaker 3E
- Int ZIP 100 with 1 cartridge
- Okidata 610e/ps 600dpi Laser Printer with Appletalk connectors
- 12x12 Graphics Tablet

8600/200
Starting at \$2499

Per Month
\$179

Most Popular Configuration

Graphix Systems

Perfect for:
Graphic Designers, Printers, Service Bureaus,
advertising agencies, and marketing departments



FREE!

**FreeHand
v5.5**
With Every Graphix
System Lease
\$359 Value

7300/180
ENTRY LEVEL SYSTEM

Per Month
\$119

- PowerMac 7300/180
- 12 x CD ROM
- 80MB RAM
- 2GB hard drive
- Extended keyboard
- Viewsonic 17EA AV Monitor
- 4MB VRAM
- ScanMaker II E3 color Scanner
- Okidata 600e/ps Laser Printer
- 6x8 Graphics Tablet
- IOmega Zip 100 with 1 cartridge

**Systems
Starting at
\$1799**

9600/200
HI END DTP SYSTEM

Per Month
\$319

- PowerMac 9600/200
- 12 x CD ROM
- 160MB RAM
- 4GB internal hard drive
- Extended keyboard
- ViewSonic P810 21"
- IMS 8MB PCI Video Card
- ScanMaker III/Trans & Photoshop
- Sony 8GB DAT tape drive
- SyJet 1.3GB Drive/w 2 cartridges
- GCC 808 600dpi, 11x17 Printer
- 12x12 Graphics Tablet

**Systems
Starting at
\$2499**



**VIEWSONIC
17"EA IN**
\$619!

- 1280x1024 Resolution
- .28mm Dot Pitch
- Built in Speakers

Monitors

Sony 100SX 15", 1280x1024, .25mm	\$369
ViewSonic 15ES, 1024x768, .28mm	\$359
ViewSonic 17EA AV, 1280x1024, .28mm	\$619
ViewSonic 17GA, 1024x768, .27mm	\$679
Sony 200SX 17", 1024x768, .25mm	\$689
Sony 200SF 17", 1280x1024, .25mm	\$789
Sony 20SF II-300, 1600x1200, .30mm	\$1669
Sony 20SE II, 1600x1200, .25mm	\$1979
ViewSonic GT800 20", 1600x1280, .30mm	\$1279
ViewSonic P810 21", 1600x1200, .25mm	\$1549
RasterOps SuperScan MC20, 1600x1200, .30mm	\$1339
RasterOps MC801 21", 1600x1200, .25mm	\$1679
Radius PressView 21SR, 1600x1200, .25mm	\$2989

SALE

SALE



Hard Drives

2GB Internal
\$339
LOW Prices

	Internal	External
Quantum 1.2GB 5400 SCSI 10ms	\$239	\$299
Quantum 2GB 5400 Ultra SCSI 10ms	\$339	\$399
Quantum 3GB 5400 Ultra SCSI 10ms	\$379	\$439
Quantum 4GB 7200 Ultra SCSI 7.9ms	\$849	\$909
Fujitsu 4GB 7200 Ultra SCSI 7.9ms	\$839	\$899
Fujitsu 9GB 7200 Ultra SCSI 7.9ms	\$1599	\$1659
Seagate 4GB 7200 Barracuda 4 7.9ms	\$1149	\$1209
Seagate 9GB 7200 Ultra SCSI 7.9ms	\$1989	\$2089
Micropolis 9GB 7200 Ultra SCSI 7.9ms	\$1499	\$1559

SALE

SALE



- 600 dpi camera ready output
- 8.5" x 11" print size
- 250 sheet capacity

OKIDATA 600e/ps
\$599!

Laser Printers

HP 6MP, 8.5x11	\$889
Okidata 600e/ps, 8.5x11	\$599
Epson Stylus Color Pro XL, 11x17	\$1729
Epson Stylus Color 800, 8.5x11	\$449
GCC XL 608, 600dpi, 11x17	\$2339
GCC XL 808, 800dpi, 11x17, Ethernet	\$2989
GCC XL 1208, 1200dpi, 11x17, Ethernet	\$4169
NewGen Design XP6, 600dpi, 11x17	\$2299
NewGen Design XP12, 1200dpi, 11x17, E-net	\$4399

SALE



32 MB
Only \$179

256K Cache
Only \$59

Memory

Size	DIMMS	SIMMS
4MB	N/A	\$29
8MB	\$49	\$47
16MB	\$89	\$89
32MB	\$179	\$179
64MB	\$369	NA
128MB	\$1219	NA

Lifetime Warranty



MICROTEK
SCANMAKER III
\$1439!

- 36-bit color
- 1200 dpi
- Built in Gamma Correction

Free Transparency

Scanners

UMax PowerLook II/Transparency/Photoshop	\$1389
Agfa SnapScan/Color It	\$299
Agfa StudioStar/Photoshop LE	\$819
Agfa Arcus II/Transparency/Photoshop	\$1769
Agfa DuoScan/Transparency/Photoshop	\$4799
Microtek ScanMaker II E6/Color It	\$489
Microtek Scanmaker III/Trans/Photoshop	\$1439
Microtek Scanmaker E3/Color It	\$189

SALE

Optical & CDR Drives

Jaz 1GB with 1 cartridge	\$449
Olympus 2.6GB with 1 cartridge	\$1789
Pinnacle Vertex 2.6GB with cartridge	\$1489
JVC 4x/2xCDR with Toast	\$439
Yamaha 4x/6xCDR with Toast	\$1049

SALE

Optical Cartridges

OEM 128MB	\$8.99
OEM 230MB	\$11.59
OEM 600/650MB	\$24
OEM 1.2/1.3GB	\$39

SALE



**IOmega
JAZ 1GB**
\$449!



128 MB
\$8.99 (10+)

**74 MINUTE CD ROM
RECORDABLE MEDIA**
\$59.99 BOX OF 10



SyQuest & ZIP Drives

ZIP 100 Ext/with cart	\$139*
SyJet 1.3GB Ext/with cart	\$489
200MB Ext/with cart	\$449

SALE

SyQuest Cartridges

JAZ 1GB	\$89
Zip 100MB	\$14
200MB	\$61
88MB	\$41
44MB	\$37

JAZ 1GB
Only \$89

*With \$50 Manufacturers Rebate



Tape Drives

Sony 8GB (7000)	\$1199
Sony 8GB (5000)	\$999
ExaByte 8205XL	\$1479
ExaByte 8505XL	\$2109
DLT 40GB	\$4489

SALE

**Digital
Graphix**

PC Systems
also available

800-680-9062

SALES. USA & CANADA

310-783-1525 FAX
310-783-1515 INTERNATIONAL

Prices subject to change without notice. Not responsible for typographical errors. Call for an RMA number before returning equipment.

Order from 5:30am - 5:30pm M-F pst

CIRCLE 33 ON READER SERVICE CARD



radius Quantities are Limited...

AWARD WINNING PRODUCTS

20/19 INCH TRINITRON \$999

TWENTY ONE INCH DISPLAYS



PressView Series from **\$1899**

21 Inch DiamondTron Monitor **\$1699***

- Rated Superior to Trinitron
- 2 year Mfr's Warranty on some models
- Largest Aperture Grille monitor available
- Up to 1600x1200 on Macs and PCs
- Full Digital Control from Keyboard



Radius SuperMatch 21 TXL from **\$1699***

Radius PrecisionView 21 from **\$2899***

Radius PressView 21sr **\$CALL**

NEC 20" & 21" Displays **\$1499***

Radius PrecisionColor Display 21 **\$CALL**

RasterOps SuperScan MC 21 **\$CALL**

Radius Multiview 21 **\$799**

Radius 21 inch Grayscale Display

*With qualifying videocard, accelerator, or computer purchase

TWENTY INCH DISPLAYS

TRINITRON BLOWOUT-LOWEST PRICE EVER!

While Supplies Last!

20" SONY Trinitron Technology

- Industrial Grade CRT
- Two page WYSIWYG output



SuperMac SuperMatch 20 Plus **\$999***

Radius PrecisionColor 20v **\$1099***

Digital 20 inch Display Up to 1280x1024 **\$1399**

RasterOps 20 Multimode **\$1299**

Radius PrecisionColor 19 **\$899***

Radius IntelliColor Display 20 **\$1499***

- MacUser, MacWorld, MacWeek Editor's Choice
- 1600x1200 to 640x480

Apple Multiple Scan 20 Display **\$CALL**

SuperMac Trinitron from **\$1099**

Radius 20 inch Grayscale Display **\$699**

*With qualifying videocard, accelerator, or computer purchase

SEVENTEEN INCH DISPLAYS

SuperMac SuperMatch 17 **\$499***

- Studio Grade Trinitron CRT
- 0.26 Dot Pitch



SuperMatch 17T TRINITRON **\$699**

PrecisionColor Display 17 from **\$899**

PrecisionView 17 **\$CALL**

Radius PressView 17sr **\$CALL**

SuperMac/E-Machines T16llmr from **\$599***

*With qualifying videocard, accelerator, or computer purchase

PORTRAIT DISPLAYS

Radius Pivot Display **\$199***

We have cards for SE/30, LC, IIsi
Nubus, and Quadras

*With purchase of video card.

PrecisionColor Pivot **\$599**

Color Pivot LE **\$399**

Radius Full Page Display **\$299**

Apple Portrait Display **\$399**

Portrait Display Labs 1700 **\$CALL**

E-machines ColorPage 15 with NUBUS card **\$395**



24 BIT COLOR \$150

1600x1200 PCI & NUBUS

IMS Twin Turbo 128M ♦♦♦♦MacWEEK

- 1600 x 1200 to 640 x 480 resolutions
- MPEG video playback
- 128-bit wide architecture
- 2MB Interleaved VRAM, upgradeable to 4MB



\$199
from

Radius Thunder II & IV GX Cards

Radius Thunder 3D

Radius ThunderColor 30/1152 & 1600

Radius ThunderPower 30/1920

Radius PrecisionColor 8/1600

\$BELOW COST

\$CALL

\$CALL

\$CALL

\$399

21" RESOLUTIONS

Radius 24-bit cards

Radius PrecisionColor 24X

Thunder 8 "Fastest 8 bit card ever"

Thunder 24 & Thunder 24/GT*

Radius LeMans GT

SuperMac Ultima LX*

RasterOps Horizon 24*

RasterOps Prism GT

Radius PrecisionColor 8XJ

*DSP Available

from **\$399**

\$599

\$CALL

from **\$499**

\$799

\$499*

\$699

\$CALL

\$499

20/19" RESOLUTIONS

Radius 24-bit cards

SuperMac Spectrum 24 Series V

Radius PrecisionColor Pro 24XK

SuperMac Futura MX

RasterOps PaintBoard Lightning

SuperMac Spectrum 8

PowerView/SuperView for Powerbooks

from **\$150**

\$599

\$CALL

\$299

\$CALL

\$99

\$199/\$299

17/16" RESOLUTIONS

Radius 24-bit video cards

Radius PrecisionColor Pro 24XP

SuperMac Futura SX

RasterOps 24 MX

from **\$189**

\$CALL

\$299

\$399

PHOTOSHOP ACCELERATION

Radius PhotoEngine

- Four AT&T 3210 66MHz DSPs
- Accelerates Photoshop Filters
- Up to 15x acceleration on all Macs
- MacUser Editor's Choice
- Available in Daughtercard or NUBUS versions



\$389*
from

Radius Photo Booster for Quadra/PDS or Rockets

SuperMac DSP daughter cards for Thunder/Ulturas

from **\$199**

\$299

COLOR CALIBRATORS



SuperMac Display Calibrator

SuperMac Display Calibrator PRO

Radius Mac ProSense Calibrator

\$199
only

\$399

\$799

600 DPI TABLOID \$1999

QMS 860 Hammerhead

- 600 dpi 11 x 17
- Powerful RISC processor

\$1999
from

Hewlett-Packard 4MV

\$2499

- 600 dpi 11 x 17
- Powerful RISC processor

GCC Elite XL series 800dpi (11.6" x 20") from **\$1999**

QMS 825/825mr from **\$399**

- Canon Engine
- Postscript
- Dual Paper Tray



EPSON, Hewlett-Packard, Umax Authorised Dealer

Ask about Printers available in 220v!

www.cra-sys.com

Supplies Won't Last... **SUPERMAC**

FASTEROPS

STOP!!
LOOK!!
REBATES
ON CPUs

AT OR BELOW DEALER COST!

AWESOME REBATES

ON-SITE WARRANTY!!

UMAX SUPERMAC SERIES

	CPU ONLY	BUNDLE REBATE
C500/180 603e/180	\$1349	from \$1149
C600/180 603e/180	\$1695	from \$1285
C600/200MHz 603e/200	\$1995	from \$1550
C600/240 603e/240	\$2295	from \$1793
J700/150 604e/150	\$2795	from \$1859
J700/180 604e/180	\$3095	from \$2125
S900/180/604e/180	\$3199	from \$2739
S900/200/604e/200	\$3399	from \$2915
S900/225MHz 604e/225	\$3899	from \$3355
S900/180DP 604e/180	\$3899	from \$3329
S900/200DP 604e/200	\$4499	from \$3855

*FREE ClarisWorks, Netscape Navigator & Internet Access with every CPU purchase !! *

APPLE SYSTEMS

PCI MAC

	CPU ONLY	BUNDLE REBATE
4400/200MHz	\$1699	from \$1429
7200/120	\$1349	from \$1125
7300/180	\$2699	from \$1950
8600/200	\$3199	from \$2709
9600/200	\$3699	from \$3145
9600/200MP	\$4699	from \$4015
8500/120	\$1699	from \$1425
7600/132	\$1729	from \$1475

*Rebate Prices available with qualifying monitor or card purchase !! *

MOTOROLA SERIES

StarMax

5 YEAR WARRANTY!!

	CPU ONLY	BUNDLE REBATE
3000/160DT 603e/160	\$1095	from \$1035
3000/160MT 603e/160	\$1149	from \$1089
3000/180DT 603e/180	\$1249	from \$1151
3000/180MT 603e/180	\$1395	from \$1288
3000/200DT 603e/200	\$1495	from \$1339
3000/200MT 603e/200	\$1695	from \$1325
3000/240MT 604e/240	\$2195	from \$1949
4000/160DT 604e/160	\$1595	from \$1355
4000/160MT 603e/160	\$1795	from \$1533
4000/200DT 604e/200	\$2495	from \$1949
4000/200MT 604e/200	\$2695	from \$2145

PRICES CHANGE FREQUENTLY - CALL FOR TODAY'S BEST DEAL!!

APPLE SYSTEMS

NUBUS MAC

	CPU ONLY	BUNDLE REBATE
6100/60	\$979	from \$795
6100/66	\$999	from \$799
WG6150	\$1445	from \$1249
7100/66	\$1299	from \$949
7100/80	\$1399	from \$1049
8100/80	\$1699	from \$1325
8500/120	\$1699	from \$1425
7600/132	\$1729	from \$1475

*Rebate Prices available with qualifying monitor or card purchase !! *

GUARANTEED LOWEST PRICE ON ALL DIGITAL VIDEO!

TRUEVISION Targa 2000

- 16-bit audio up to 48KHz
- NTSC: 30 frames/60 fields per second,
- Supports PAL broadcast standards

NEVER UNDER SOLD!!



**Targa 2000 Pro
Media 100 Products**

**\$CALL
\$CALL**

Video Vision Studio, PCI and Nubus

- 24bit Full-Screen, Full-Motion Video
- Includes Adobe Premiere and VideoFusion
- Breakout bar supports dual input

**CALL FOR
BEST PRICE!!
\$INSTOCK!**

Video Vision Studio Array 4-12GB

Radius Spigot Pro AV \$999

- 24bit Full-Screen, Full-Motion Video
- Includes Apple AV card!

Radius Spigot Power AV \$799

- Includes Apple AV card!

Video Vision Telecast PCI/Nubus

- Full-motion, broadcast-quality video
- Available as upgrade for Video Vision Users

Complete at \$2999

miroMOTION DC30 M-JPEG PCI video capture & playback

Spigot II Tape Now Bundled with Adobe Premiere

VideoSpigot Cards Nubus/LC/IIsl

**\$CALL
\$399
from \$99**

BEST DIGITAL VALUE ANYWHERE!

**Full Digital Video Workstation
for less than a
PCI Digital Video card alone!!**

SAME TECHNOLOGY FOR HALF THE PRICE!!

**RADIUS 81/110
32/2GB AV Drive/CD with Video Vision**

only \$2998



PowerMacs

**\$799
from**



**SET-UP WAIVED!
10 FREE DAYS
With every purchase!**



**New and Factory
Recertified Models
of Most Items
Available**

CRA Systems, Inc.

300 South 13th St., Waco, TX 76701

Monday thru Friday 9AM to 7PM CST Saturday 10AM-4PM Sales Dept. Only

Domestic Sales sales@cra-sys.com Fax 817.750.9050

Consultants/Dealers 817.754.2120 International Sales 817.754.2120

Prices reflect 2% cash discount. Prices subject to change. Not liable for typographical errors. All shipping charges for COD orders to be secured by credit card. Dealers and consultants call for quantity pricing. We ship anywhere.



DEALER AND EDUCATIONAL DISCOUNTS AVAILABLE ON MOST ITEMS!

CIRCLE 50 ON READER SERVICE CARD

800/375-9000

Product Index

ADVERTISER PAGE

Display System & Video

Corel Systems Corporation 613-728-0826 ext. 3080	37
Mitsubishi Display Products 800-843-2515	43
Panasonic www.panasonic.com/alive	81

Education

Mindscape 800-234-3088	153
------------------------------	-----

Entertainment

Apple Software, Claris 800-950-5382 ext. 1401	150
Apple Software, Claris 800-950-5382 ext. 1401	151
MacSoft 800-229-2714	149

General Hardware & Accessories

Apple Computer, Inc. www.apple.com	72
GCC Technologies 800-422-7777	33
Motorola Computer Group 800-759-1107 ext. MCU	2-3
Orange Micro 714-779-2772	84
Power Computing 800-405-7693	Cover 2-4,1
Power Computing 800-405-7683	Cover 5-8
Ricoh System Corporation 800-967-UNDO	82

Graphics & Design

Binuscan 800-881-2352	9
Diehl Graphsoft 410-290-5114	77
Engineered Software 910-299-4843	6
Extensis 800-796-9798	85
Integrated Micro Solutions 888-IMS-8282	75
Linotype-Hell 800-842-9721	45
Quark, Inc. 800-788-7835 ext. 3017	10-11
Splash Technology http://www.SplashTech.com	91
Strata 800-STRATA3D	86

Internet/Online Products

EarthLink Network 800-395-8425	49
GoLive Systems http://www.golive.com	88
JavaSoft 800-Javasoft	18-19
PointCast www.pointcast.com	35

Mail Order

ClubMac 800-258-2622	122-123
----------------------------	---------

ADVERTISER PAGE

Computer Discount Warehouse 800-291-4239	113-115
CRA Systems 800-375-9000	110-111
Digital Graphix 800-680-9062	108-109
LLB Company, Inc. 800-848-8967	102-103
Mac Bargains 800-407-7404	100-101
MacConnection 800-998-0055	98-99
MacMall 800-217-9498	104-105
MacWarehouse 800-725-1454	120-121
MacZone 800-436-8000	124
ProDirect 800-555-1256	119

Organizational Tools

AEC Software 800-450-1983	12
Apple Computer, Inc. 800-909-0260	20
Palm Computing 800-881-7256	47

Output Devices

GCC Technologies 800-422-7777	33
Minolta www.minoltausa.com	39
Tektronix 800-835-6100	15
Xerox Corporation 800-ASK-XEROX ext. 671	50-51

Performance Enhancers

Orange Micro 714-779-2772	84
---------------------------------	----

Programming & Systems

Apple Computer, Inc. 800-538-9696	26-27
UMAX Computer Corp. 800-232-UMAX	40-41

Resources

AEC Software 800-450-1983	12
---------------------------------	----

Storage Systems

APS Technologies 800-235-3707	106-107
FWB Software http://www.fwb.com	7
GCC Technologies 800-422-7777	33
Maxell Corporation of America 888-2-MAXELL	16
Ricoh System Corporation 800-967-UNDO	82

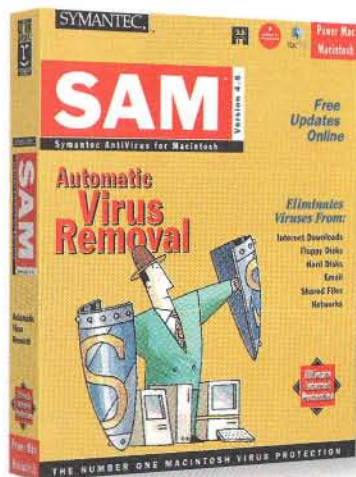


**COMPUTER
DISCOUNT
WAREHOUSE™**

**The right price.
The right advice.™**



**“Get
more”**



SYMANTEC.™

SAM V4.5

Maximum Internet virus protection

**\$20
rebate!***

SAM is maximum Mac virus protection, keeping your files safe from viruses hidden in Internet downloads, compressed files, shared files and e-mail attachments. SAM's new SafeZone acts as a virtual clean room so copies or downloaded files can be scanned in isolation before you use them. SAM hunts down viruses before they damage your files. It keeps your protection up to date—just click on Auto Update to download the latest definition files free. SAM also repairs infected files so you can open and work with them safely. Everything is automatic, so you can focus on what you want to do.

- ▲ SafeZone Internet protection automatically protects the desktop, or any folder, from infection from downloaded files
- ▲ Scan on open or shared documents—allows scanning of MS Word and Excel files shared via File Sharing on open
- ▲ Expanded modem compatibility—easier to update virus definitions with Auto Update
- ▲ MS Office Installer support
- ▲ Improved ease of customization
- ▲ Improved alerting—longer custom alert messages

\$44.17*

CDW 75075

*After \$20 mail-in manufacturer rebate.
Offer valid 4/1/97 through 6/30/97.

Norton Utilities V3.2

The comprehensive data protection and recovery tools for Macintosh

Norton Utilities™ V3.2 by Symantec proactively prevents trouble by immediately alerting you when problems arise. It recovers data when disaster strikes. It even rescues data from totally trashed disks. Not only does it scan for disk errors in the background—alerting you to any problems before data is harmed—but it also automatically notifies you when maintenance is recommended. Put these tools to work for you and never fear data loss again.

Disk repair

▲ **Improved Norton Disk Doctor™:** The most effective technology for diagnosing and repairing disk problems, now analyzes and repairs more disk areas than any other product. Identifies problems and recommends solutions with easy-to-expert-level error messaging.

▲ **Rebuild Desktop:** Norton Disk Doctor now completely rebuilds your desktop file, eradicating any damage. You can even add a single file or save your finder comments.

▲ **Norton Disk Editor:** Enables experienced users to explore and edit the structure and content of files and disks.

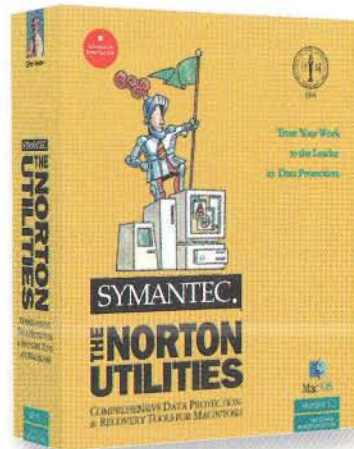
Data recovery

▲ **Volume Recover:** Instantly restores crashed, accidentally erased or initialized hard disks; if the disk is so badly damaged it cannot be repaired, it recovers files to diskette automatically.

▲ **UnErase:** Now recovers more trashed or lost files than ever before; simple step-by-step recovery in a snap.

▲ **Recover File:** Quickly and effectively recovers data from damaged files of any type.

▲ **Emergency Diskette included:** Provides easy rebooting after a crash; includes Startup Disk Builder to build bootable floppy disks for even the newest machines.



Data protection

▲ **FileSaver™:** Now scans automatically in background; notifies you when repairs or maintenance are needed. Maintains a record of critical disk and file information for improved recovery.

▲ **Norton Fastback:** Provides fast, safe and automatic backup up to floppies, hard disk or tape (sequential, DAT drives); self-restoring backups from floppy or hard disk.

▲ **WipeInfo:** Assures that deleted confidential information is never recovered.

\$94.27

CDW 61695

CDW® sells for less and services you better!™

800-291-4239



**COMPUTER
DISCOUNT
WAREHOUSE™**

The right price.
The right advice.

We offer you

“Get more than
just a great price.
Call today and get a
little empathy,
some free advice
and a free CDW
catalog.”



Robotics®
The Right Choice in Information Access
**Sportster
56K
Faxmodem
for Macintosh**
Now with 56K bps x2 Technology

Includes Sportster 56K Faxmodem (capable of 56K bps downloads; however, current regulations limit download speed to 53K bps), RJ-11 phone cord, AC adapter, cable, U.S. Robotics Connections™ CD-ROM with fax and communication software, Internet access software and more than 30 software programs and special offers

\$219.99 CDW 81425

Internet connectivity requires access services from an Internet access provider. Contact your local access provider(s) for rates, terms and conditions.

NEW!



EPSON®
**Stylus
Color 600**

Award-winning
photo-quality color
printing for today's home or office

4-color (CMYK) drop-on demand MicroPiezo ink jet print technology ■ 1440 x 720 dpi photo-quality color and laser-quality black text on premium paper ■ 720 x 720 dpi photo-quality color and laser-quality black text on plain paper ■ Print speeds: up to 6 ppm black; up to 4 ppm color ■ 2-year limited warranty

\$359.66 CDW 79403

**FREE Look
Your Best
Color Pak***



*Look Your Best Color Pak includes: Adobe® Home Publisher and Adobe PhotoDeluxe for Macintosh, valuable software for Epson products and more.

Hardware, Software & Peripherals at **DISCOUNT** Prices!

COMPUTERS



StarMax Series Desktops	
3000/200MHz PowerPC 603e	
16MB 1.2GB 8X CD	1499.15
4000/160MHz PowerPC 604e	
16MB 1.2GB 8X CD	1529.05
4000/200MHz PowerPC 604e	
16MB 1.2GB 8X CD	2199.99
StarMax Series Mini-towers	
3000/180MHz PowerPC 603e	
32MB 2.4GB 8X CD	1429.08
3000/200MHz PowerPC 603e	
32MB 2.4GB 8X CD	1699.96
3000/240MHz PowerPC 603e	
32MB 2.4GB 8X CD	2178.26
4000/160MHz PowerPC 604e	
32MB 2.4GB 8X CD	1715.56
4000/200MHz PowerPC 604e	
32MB 2.4GB 8X CD	2399.04



SuperMac Series Desktops	
C500 160MHz PowerPC 603e	
16MB 1.2GB 8X CD	1199.00
J700 150MHz PowerPC 604	
16MB 2.1GB 6X CD	2195.00
SuperMac Series Mini-towers	
C600 180MHz PowerPC 603e	
16MB 1.2GB 8X CD	1499.00
C800 200MHz PowerPC 603e	
16MB 2.1GB 8X CD	1799.00
C800 240MHz PowerPC 603e	
24MB 2.1GB 8X CD	2099.00
S900L 180MHz PowerPC 604e	
32MB 2.1GB 8X CD	3199.00
S900L 2x180MHz PowerPC 604e	
32MB 2.1GB 8X CD	3899.00
S900L 200MHz PowerPC 604e	
32MB 2.1GB 8X CD	3399.00
S900L 225MHz PowerPC 604e	
32MB 2.1GB 8X CD	3899.00

MONITORS



SuperScan Mc 611 17" 28mm	779.53
SuperScan Mc 801 21" 28mm	1664.85
MAGNAVOX	
MB5314 15" 28mm	339.37
MB7000 17" 28mm	539.91

NEC

M500 15" 25mm w/speakers	375.29
XV15+ 15" 28mm	376.41
XV17+ 17" 28mm	696.16
XE21 21" 28mm	1579.65

SONY

100sx 15" 25mm	354.02
100sf 15" 25mm	394.36
200sx 17" 25mm	648.28
200sf 17" 25mm	677.50
17se21 17" 25mm	776.10
300sf21 20" 30mm	859.52
GDM-W900 24" 25mm	1565.46
GDM-W900 24" 25mm	4444.33

ViewSonic®

E641 14" 28mm	226.25
E655 15" 28mm	318.76
17GS 17" 27mm	648.28
17GA 17" 27mm	617.47
GT770 17" 25mm	648.18
PT770 17" 25mm	718.58
PT775 17" 25mm	835.96
GT800 20" 30mm	1149.35
G810 21" 25mm	1365.99
P810 21" 25mm	1469.27
PT813 21" 28mm	1579.84
P815 21" 25mm	1586.40

VIDEO BOARDS



Xclaim TV external TV tuner	81.44
Xclaim 3D 4MB PCI	188.19
Xclaim 3D 8MB PCI	256.91
Xclaim VR 2MB PCI	219.56
Xclaim VR 4MB PCI	299.58

INTEGRATED MICRO SOLUTIONS

Turbo TV video capture	129.87
Twin Turbo 128M2 2MB PCI	239.93
Twin Turbo 128M4 4MB PCI	399.52
Twin Turbo 128M8 8MB PCI	766.47



Thunder 30/1600	694.54
ThunderColor 30/1152	1585.73
ThunderColor 30/1600	1986.26
ThunderPower 30/1920	1205.13



Bravado 1000 PCI	629.31
Targa 1000 PCI	1569.94
Targa 2000 PCI	3036.85
Targa 2000RTX PCI	7708.60

COMMUNICATIONS



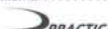
SupraExpress 33.6 external	119.13
SupraExpress 336e Sp 33.6 external	139.13
Supra 33.6 faxmodem external	179.20
SupraSonic 33.6 external	225.38



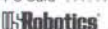
PowerPort Platinum 28.8 PC Card	269.52
PowerPort Platinum Pro 28.8 PC Card	429.55
TelePort Internet Edition 33.6	169.57
TelePort Speakerphone Edition 33.6	246.42



ACCURA 336 external	149.35
OPTIMA 336 external	245.08



MacClass 336 V.34 MiniTower II	109.80
MacClass 33.6 PC Card	149.35



Megahertz 28.8 cell-capable CruiseCard	229.00
Megahertz 33.6 Ethernet 10BT PC Card w/RJ11	299.10
Megahertz AllPoints wireless PC Card	464.12
Sportster 28.8 PC Card w/DataView	189.12
Sportster 33.6 external	169.29
Sportster Voice 33.6 external	189.68
Sportster 56K x2 faxmodem external	219.99
Courier V. Everything 33.6 external	269.51
Courier I-modem	339.86

DATA STORAGE



Hi-Val SounTastic 4X CD Kit	159.60
Hi-Val 8X4 CD-changer external	239.78
Hi-Val 8X4 CD-changer w/software external	275.33
Hi-Val SounTastic 12X CD external	239.78
Hi-Val SounTastic 12X CD Kit w/software	259.82



Zip drive 100MB SCSI external	149.95
100MB Zip disk	19.95
100MB Zip disk 3-pack	49.95
Jaz Drive 1GB SCSI-2 external	499.95
P810 21" 25mm	124.95
TGB Jaz disk 3-pack	299.95
Jaz Jet PCI SCSI interface for Power Mac	99.95

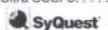
DATA STORAGE



Fireball TM 1.2GB Ultra SCSI-3 internal	299.00
Fireball TM 1.2GB Ultra SCSI-3 external	369.00
Fireball TM 2.1GB Ultra SCSI-3 external	449.00
Atlas II 4.3GB Wide Ultra SCSI-3 internal	899.00
Atlas II 4.3GB Wide Ultra SCSI-3 external	999.00
8X CD-ROM drive external	199.00
8X 4-CD changer external	299.00



Fireball 2.1GB Ultra SCSI-3	325.49
Fireball 3.2GB Ultra SCSI-3	374.48
Atlas II 4.5GB Ultra SCSI-3	917.87



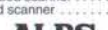
EZFlyer 230MB external	286.85
EZFlyer 230MB cartridge	29.39
SyJet 1.5GB SCSI internal	399.00
SyJet 1.5GB SCSI external	499.00
SyJet 1.5GB cartridge	109.25

MEDIA	
3M 63 minute (550MB) CD-recordable	6.54
3M 74 minute (650MB) CD-recordable	6.94
3M Travan TR-1 400MB	28.23
3M Travan TR-2 800MB	28.45
3M Travan TR-3 1.6GB	29.56
3M Travan TR-4 4GB	33.71
Fuji 100MB Zip Disk	19.00
Sony 100MB Zip disk	14.65
SyQuest 88MB cartridge	44.43
SyQuest 200MB cartridge	62.93
SyQuest 270MB cartridge	49.56

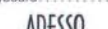
INPUT DEVICES



ePhoto 307 digital camera	474.30
SnapScan flatbed scanner	294.18
StudioScan Ili flatbed scanner	519.29
StudioStar flatbed scanner	799.24
Arcus II flatbed scanner	1995.00



Portable GlidePoint	41.45
Desktop GlidePoint	69.84
GlidePoint Keypad	139.30
GlidePoint Keyboard	105.88



PowerMouse	19.33
Soft Touch Plus extended keyboard	47.05
NU-Form extended keyboard	58.98
NU-Form extended keyboard w/touchpad	76.52
Tru-Form extended keyboard	67.10
Tru-Form extended keyboard w/pointer	77.39
Tru-Form Touch Pad	83.81



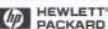
UltraSlate 4 x 5	129.56
UltraSlate 6 x 9 with Live Pix SE	254.77
UltraSlate 6 x 9 with Live Pix SE/Painter	519.72



QuickCam digital video camera	97.99
Color QuickCam digital video camera	224.59



PhotoPC digital camera	399.00
PhotoPC 500 digital camera	499.00
Stylus Color 600 printer	299.00
Stylus Color 800 printer	449.00
Action Scanning System II	317.94
ES-1000C color flatbed scanner	569.37
Expression 636 Executive scanner	868.17
Expression 636 Artist scanner	1269.71
Expression 636 Professional scanner	1758.88



HP ScanJet 4B flatbed scanner	429.35
HP ScanJet 5P flatbed scanner	857.90

INPUT DEVICES



DC20 24-bit digital camera	199.00
DC25 24-bit digital camera	499.00
DC25 24-bit digital camera w/Zoom lens	699.00



Cordless Mouse Man	62.73
TrackMan Marble	83.23
TrackMan Level	119.24



ScanMaker E3	189.81
ScanMaker E6 Standard	468.52
ScanMaker E6 Professional	599.28
ScanMaker 351 Plus	738.15



AX-110 Scantouch flatbed scanner	289.74
AX-210 ScanTouch flatbed scanner	569.41
LS-20 Super CoolScan II	1154.02
Super CoolScan film scanner	1727.85



PDC 2000/40 digital camera	2986.26
SprintScan 35LE film scanner	770.41
SprintScan 35ES film scanner	1499.52
SprintScan 35+ film scanner	2049.17



Vista-S6E with PhotoDeluxe	269.18
Vista-S6E with full Photoshop	549.98
Vista-S12 with PhotoDeluxe	439.82
Vista-S12 with Photoshop LE	499.07
Vista-S12 with full Photoshop	629.61
PowerLook II	1955.00



PaperPort vx	277.21
--------------	--------



ArtPad II 4 x 5 graphics tablet	139.95
ArtPad II 6 x 8 graphics tablet	289.00
ArtPad II 12 x 12 graphics tablet	419.00
ArtPad II 12 x 18 graphics tablet	654.97

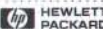
PRINTERS



MD-2010 color	499.00
MD-4000 color printer	699.00



Stylus 1500	995.00
Stylus Pro XL	1499.00



HP DeskJet 340 portable ink jet printer	289.94
HP DeskJet 1600CM printer	1959.11
HP DeskWriter 680C printer	285.76
HP LaserJet 6MP printer	878.45

CARRYING CASES



Notebook Case	39.00
Notebook Plus Case	59.99
Universal Notebook Case	69.00
Leather Notebook Case	99.00
Deluxe Universal Case	129.99
Notebook Catalog Carrying Case	149.95

UPS SYSTEMS



PowerChute software for Novell NetWare	57.93
Back-UPS Office	199.95
Back-UPS 200	92.18
Back-UPS 400	139.17
Back-UPS 600	237.76
Smart-UPS 450NET	299.41
Smart-UPS 700NET	374.87
Smart-UPS 1000NET	514.94
Smart-UPS 1400NET	646.13
SurgeArrest P7 Home	8.45
SurgeArrest Personal	16.25
SurgeArrest Pro	26.08
SurgeArrest Network	29.45

800-291-4239

\$2.99 UPS ground shipping on all orders of \$200 or less!

a rare sales tool. it's called objectivity.



StarMax

**4000/200
mini-tower**

**High performance,
aggressive price**

- ◆ 200MHz PowerPC 604e processor ◆ 32MB RAM standard ◆ 2.4GB hard drive ◆ 8X CD-ROM drive
- ◆ Software: Mac OS version 7.5.3

\$2399.04

CDW 76826



\$318.76

E655

**Quality that is
truly affordable**

- 15" flat square screen
- CRT (13.8" viewable image size)
- Anti-glare and anti-static screen coating
- 28mm dot pitch
- Maximum resolution: 1280 x 1024
- 3-year limited warranty on CRT, parts, and labor

CDW 79415



Director 6 Upgrade

**A powerful authoring tool for
multimedia and the web**

- Create Internet and hybrid CD+Internet applications with drag-and-drop behaviors, live web authoring and streaming Shockwave
- Reach Windows and Macintosh users worldwide and control your Shockwave movies via browser scripting
- Increase your productivity with Director's new object properties and interactivity using drag-and-drop behaviors, 120 sprite objects and media synchronization of sound and digital video files with your Director animations

\$379.88

CDW 84996

CDW carries over 20,000 products! If you don't see it, Call!

SOFTWARE



Adobe

Acrobat V3.0 CD	179.41
After Effects V3.1 CD	606.15
Illustrator V6.0 (3.5" + CD)	359.18
Illustrator V6.0 upg 3.X to 6.0 (3.5" + CD)	114.98
Illustrator V6.0 upg 3.X to 6.0 (3.5" + CD)	89.96
Illustrator V6.0 upg 5.X to 6.0 (CD only)	114.98
Illustrator V6.0 upg 5.X to 6.0 (CD only)	89.96
PageMaker V6.0 (3.5" + CD)	545.78
PageMaker V6.0 upg	129.61
PageMaker V6.5 comp upg CD	545.78
PageMaker V6.5 comp upg CD	114.98
PageMaker V6.5 vers upg CD	89.96
PageMill V2.0 CD	93.07
PageMill V2.0 version upg CD	46.89
Persuasion V3.0.2	239.37
Persuasion V4.0 CD	246.16
Persuasion V4.0 upg CD	114.98
PhotoDeluxe CD	49.34
Photoshop V4.0 CD	545.78
Photoshop V4.0 vers upg CD	129.80
Premiere V4.2 CD	484.79
Premiere V4.2 upg CD	129.80
Streamline V3.1	119.93
Type Manager Deluxe V4.0 CD	47.81
Type Reunion Deluxe V2.0	32.38



Apple

Apple At Ease V3.0	29.42
Apple Internet Connection Kit V1.1 CD	43.85
Apple Mac OS 7.5.3 CD	93.15
Apple Mac OS 7.5.3 wh/Internet Connection Kit CD	95.67
Apple Remote Access Client V2.1	49.36
Apple Remote Access Personal Server V2.1	91.43

CAERE

OmniForm V2.0	129.47
OmniPage Direct V2.0	57.70
OmniPage Pro V6.0	459.02
OmniPage Pro V6.0 upg	114.75
OmniPage Pro V7.0 CD	478.42
OmniPage Pro V7.0 upg CD	114.36



Clarisc

Conflict Catcher V4.0	59.07
Let's Keep It Simple Spreadsheet	109.62

CLARIS

ClariscDraw V1.0	179.59
ClariscImpact V2.0	79.79
ClariscOrganizer V1.0.2 w/CLICKBOOK	44.85
ClariscWorks V4.0 CPU bundle	63.61
ClariscWorks V4.0 vers/comp upg	62.85
ClariscWorks V4.0 w/Internet	115.08
Emailer V1.1	41.56
FileMaker Pro V3.0	176.10
FileMaker Pro V3.0 server	887.37
FileMaker Pro V3.0 server upg	274.83
FileMaker Pro V3.0 upg	89.75
Home Office	26.62
Home Page V1.0	91.72
Home Page V2.0 CD	87.08
OfficeMail V1.0	255.51



Connectix

QuickCards V1.1 CD	31.77
RAM Doubler 2	55.68
Speed Doubler 2	55.68
VideoPhone (software only)	55.68



COREL

Corel Gallery V1.0 CD	21.09
Corel Gallery V2.0 CD	37.27
Corel Mega Gallery CD	62.47
Corel Print House CD	29.74
Corel Stock Photo Library 1 CD	659.21

SOFTWARE



COREL

Corel Stock Photo Library 2 CD	867.27
Corel Stock Photo Library 3 CD	879.07
Corel Super Ten Animals CD	37.78
Corel Super Ten Great Works of Art CD	37.78
Corel Super Ten People CD	37.20
Corel Super Ten Select Photos CD	37.13
Corel WEB GALLERY CD	63.03
Corel WordPerfect V3.5 CD	149.64
Corel WordPerfect V3.5 upg CD	79.51
CorelDRAW 6 Suite CD	359.18
CorelDRAW 6 Suite upg CD	136.37

DANTZ

Retrospect Remote V3.0	135.53
------------------------	--------

DATAVIZ

Web Buddy V1.0	47.13
----------------	-------

DATAWATCH

Virex V5.6	59.18
------------	-------

DENEBA

Canvas V5.0 3.5 + CD	379.83
Canvas V5.0 comp upg	138.15
Canvas V5.0 competitive upg	149.76

EDUTAINMENT

Activision Mechwarrior 2	46.35
Berkeley After Dark V3.2	32.72
Berkeley You Don't Know Jack CD	13.82
Brudenburg MYST CD	37.13
Bungee Marathon 2: Durandal	42.46
Bungee Marathon CD	37.32
Casady & Greene Amoeba CD	35.42
Casady & Greene Zone Warrior CD	35.42
Davidson The Perfect Resume	34.57
Davidson WarCraft Orcs & Humans CD	31.37
Interplay Descent II CD	49.39
Interplay Virtual Pool CD	42.10
Lucas Arts The Dig CD	26.90
Maxis SimCity 2000	33.53
Maxis SimCity 2000 Special Edition CD	39.18
Maxis SimCity Classic	19.73
Virgin Flight Unlimited CD	35.64

EQUILIBRIUM

DeBabelizer Lite V1.1	64.06
DeBabelizer Toolbox	919.55

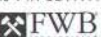
EXTENSIS

Cyberpress V1.0	128.17
Photo Tools V1.0 CD	88.94



FRAC TAL DESIGN

Dabbler V2.0 CD	42.40
Detailer CD	274.33
Expression CD	259.11
Painter V4.0	304.78
Painter V4.0 upg	117.93
Poser V2.0 CD	119.10
Poser V2.0 upg CD	62.33
Ray Dream Designer V4.1	89.45
Ray Dream Studio V4.1 CD	268.50



FWB

CD-ROM Toolkit V2.0	49.97
Hard Disk Toolkit V2.01	49.97

GRAPH

Soft Blueprint V5.0	189.37
Soft MiniCAD V6.0	514.73

SOFTWARE



INSIGNIA

MacTransfer for Windows 95 PCs	45.09
SoftWindows 95 V4.0 CD	319.16
SoftWindows for Performa	109.57
SoftWindows V3.0 CD	285.50
SoftWindows V3.0 CD w/CPU purchase	179.37



Intuit

MacIntax 1996	41.86
MacIntax Deluxe 1996 CD	49.96
QuickBooks V4.0	179.41
QuickBooks Deluxe V7.0 CD	109.91
QuickBooks V7.0 CD	59.07
QuickBooks V7.0	41.50

MACROMEDIA

Authorware Interactive Studio	1919.45
Director 5 CD	817.67
Director 5 upg CD	364.02
Director 6 upg CD	379.88
Director Multimedia Studio 2 CD	889.46
Director Multimedia Studio 2 upg CD	458.16
Director Multimedia Studio 6 CD	929.20
Director Multimedia Studio 6 upg CD	478.48
Extreme 3D CD	438.49
Extreme 3D comp upg CD	179.69
Fontographer V4.1 CD	309.82
FreeHand 7 CD	377.99
FreeHand 7 comp upg CD	137.93
FreeHand 7 upg CD	138.15
FreeHand Graphics Studio 7 CD	399.86
FreeHand Graphics Studio 7 comp upg CD	179.54
FreeHand Graphics Studio 7 upg CD	179.47
Home Page/Sound Edit bundle CD	147.07
SoundEdit 16 V2.0 CD	259.45
SoundEdit 16 V2.0 plus DECK II CD	339.38
xRes 3 CD	378.90
xRes 3 comp upg CD	185.14

MetaTools

Bryce 2 CD	179.00
Kai's Power Goo CD	49.95
Kai's Power Tools 3 CD	129.00
Power Photos I CD	129.00
Power Photos II CD	129.00
Power Photos III CD	129.00
Power Photos IV CD	129.00
Vector Effects V1.0	129.00

METROWERKS

CodeManager 3	319.28
CodeWarrior Gold 10 CD	319.38
CodeWarrior Gold 11 CD	319.55
Discover Programming for Macintosh V2.0	61.34
Discover Programming with Java V2.0	65.65

Microsoft

Arcade V1.0	29.30
Cinemania 97 CD	29.59
Encarta Deluxe 97 CD	67.24
Excel V5.0	298.44
Excel V5.0 upg	114.98
Flight Simulator V4.0	44.65
Office V4.2.1 CD	449.31
Office V4.2.1 Small Business CD	449.12
Office V4.2.1 Small Business upg CD	269.39
Office V4.2.1 vers upg	265.86
PowerPoint V4.0	296.94
PowerPoint V4.0 upg	114.98
Project V4.0	419.73
Project V4.0 upg	135.37
Visual FoxPro V3.0 CD	439.61
Visual FoxPro V3.0 upg CD	265.72
Word V6.0	29.42
Word V6.0.1	298.44
Word V6.0.1 vers upg	115.55
Words V4.0	45.46

SOFTWARE



Now Software

Contact/Up to Date V3.6 bundle CD	62.24
Startup Manager V7.0	47.71
Up-to-Date Web Publisher V1.0 CD	114.53
Utilities V6.5 CD	76.10



Pro CD

Select Phone Deluxe 97 CD	64.41
Select Phone 97 CD	44.74

QUALCOMM

Eudora Pro V3.0	55.83
Eudora Pro V3.0 5-user	209.23
Eudora Pro V3.0 upg	39.95

QuarkXPress

QuarkXmedia V1.0 CD	669.94
QuarkXPress V3.32 CD	659.16

SPECULAR

3D Web Workshop	128.51
Infiniti-D Studio V3.5	489.11
Infiniti-D V3.5 CD	369.72

STRATA

Media Paint V1.1	399.97
Studio Pro V1.75	849.37
Vision 3D V4.0	59.18

SYMANTEC

ACTI V1.0 for Newton	89.13
ACTI V2.5	148.87
ACTI V2.5 upg	47.79
Norton Disklock V4.0	72.40
Norton Utilities V3.2	94.27
Norton Utilities V3.2 upg	38.23
SAM AntiVirus V4.5	64.17
Suitcase V3.0	63.61
Symantec Cafe	87.93

VIRTUS

3D Website Builder V1.0 CD	85.53
----------------------------	-------

XEROX

Textbridge Pro V3.0	239.88
Textbridge V3.0	67.75

CDW TELEPHONE HOURS

Sales

Monday-Friday 7 a.m.-9 p.m. CT • Saturday 9 a.m.-5 p.m. CT

Tech Support for Customers

Monday-Friday 8 a.m.-9 p.m. CT • Saturday 9 a.m.-5 p.m. CT

BUY WITH CONFIDENCE

CDW IS A NASDAQ TRADED COMPANY

TICKER SYMBOL CDWC D & B rated S&P 1 Duns 10-762-7952



Credit card charges are not submitted until time of shipment. For your protection, we ship only to your credit card's verified billing address. Freight is calculated as the carrier's actual freight charge plus insurance and packaging material. The cost of insurance is 0.35% (0.0035) of the order total. Packaging materials will not exceed \$4.00 for single package shipments or \$6.00 for multi-package shipments. Before returning any product, you must obtain an RMA number. Non-defective returns are subject to a restocking fee. Software, chips and other electronic components are not returnable. Allow 10 business days for shipping when paying by personal check. All pricing subject to change. For all prices, products and offers, CDW reserves the right to make adjustments due to changing market conditions, product discontinuations, manufacturer price changes, errors in advertisements or other extenuating circumstances. All trademarks and registered trademarks are the sole property of their respective owners.

If you find a better price, call **CDW** before you buy!

800-291-4239

50 Beale Street, 12th Floor
San Francisco, CA 94105
Phone (415) 547-8600
Fax (415) 547-8803

National

John Blake, Group Publisher (415) 547-8929; (617) 393-3075
William P. Howard, Group Associate Publisher (415) 547-8959
Jen Weiss, Ad Coordinator (415) 547-8726

Mid-Atlantic/Southeast (AL, DC, DE, FL, GA, MD, NC, Metro NY, NJ, PA, SC, VA, WV)

Dina Barberio, Account Executive
50 Beale Street, 12th Floor
San Francisco, CA 94105; (415) 547-8677
Andrea Villani, Sales Assistant (617) 393-3068

Northeast (CT, MA, ME, NH, upstate NY, RI, VT, Canada, except Alberta and British Columbia)

Sharon Kiernan, District Sales Manager
Mystic Center, 10 President's Landing
Medford, MA 02155; (617) 393-3060
Heather McKee, Account Executive (415) 547-8640
Andrea Villani, Sales Assistant (617) 393-3068

Midwest (AR, IA, IL, IN, KS, KY, LA, MI, MN, MO, MS, ND, NE, NM, OH, OK, SD, TN, TX, WI)

Tom Hernandez, District Sales Manager
150 North Wacker Drive, Suite 2500
Chicago, IL 60606; (312) 214-7343
Chris Lindberg, Account Executive (415) 547-8622
Jennifer McKiernan, Sales Assistant (312) 214-7348

Northwest CA (San Mateo and north, AK, CO, HI, ID, MT, OR, WA, WY, Canada; Alberta, British Columbia)

Laura Goodwin, District Sales Representative
50 Beale Street, 12th Floor
San Francisco, CA 94105; (415) 547-8657
David A. Griffis, Account Executive (415) 547-8658
Ryan Saurer, Sales Assistant (415) 547-8634

Bay Area CA (South Bay, NV)

John Scott, Account Executive
50 Beale Street, 12th Floor
San Francisco, CA 94105; (415) 547-8631
Ryan Saurer, Sales Assistant (415) 547-8634

Southwest CA (So Cal, AZ, UT)

Dan Hudson, District Sales Representative
11766 Wilshire Blvd., Suite 1550
Los Angeles, CA 90025; (310) 268-1376
James Loza, Account Executive (415) 547-8604
Benell Grant, Sales Assistant (310) 268-1375

Advertiser Index

RS#	ADVERTISER	PHONE NUMBER	PAGE
15	AEC Software	800-450-1983	12
*	Apple Computer, Inc.	800-909-0260	20
*	Apple Computer, Inc.	800-538-9696	26-27
*	Apple Computer, Inc.	www.apple.com	72
*	Apple Software, Claris	800-950-5382 ext. 1401	150-151
148	APS Technologies	800-235-3707	106-107
133	Binuscan	800-881-2352	9
120	ClubMac	800-258-2622	122-123
136	Computer Discount Warehouse	800-291-4239	113-115
77	Corel Systems Corporation	613-728-0826 ext. 3080	37
50	CRA Systems	800-375-9000	110-111
10	Diehl Graphsoft	410-290-5114	77
33	Digital Graphix	800-680-9062	108-109
90	EarthLink Network	800-395-8425	49
73	Engineered Software	910-299-4843	6
153	Extensis	800-796-9798	85
71	FWB Software	http://www.fwb.com	7
101	GCC Technologies	800-422-7777	33
92	GoLive Systems	http://www.golive.com	88
43	Integrated Micro Solutions	888-IMS-8282	75
145	JavaSoft	800-Javasoftware	18-19
11	Linotype-Hell	800-842-9721	45
23	LLB Company, Inc.	800-848-8967	102-103
108	Mac Bargains	800-407-7404	100-101
147	MacConnection	800-998-0055	98-99
18	MacMall	800-217-9498	104-105
27	MacSoft	800-229-2714	149
157	MacWarehouse	800-725-1454	120-121
135	MacZone	800-436-8000	124
22	Maxell Corporation of America	888-2-MAXELL	16
95	Mindscape	800-234-3088	153
129	Minolta	www.minoltausa.com	39
86	Mitsubishi Display Products	800-843-2515	43
85	Motorola Computer Group	800-759-1107 ext. MCU	2-3
130	Orange Micro	714-779-2772	84
143	Palm Computing	800-881-7256	47
80	Panasonic	www.panasonic.com/alive	81
*	PC EXPO	800-829-3976	92
*	PointCast	www.pointcast.com	35
24	Power Computing	800-405-7683	Cover 2-4, 1
24	Power Computing	800-405-7693	Cover 5-8
75	ProDirect	800-555-1256	119
5	Quark, Inc.	800-788-7835 ext. 3017	10-11
160	Ricoh System Corporation	800-967-UNDO	82
54	Splash Technology	http://www.SplashTech.com	91
110	Strata	800-STRATA3D	86
124	Tektronix	800-835-6100	15
141	UMAX Computer Corp.	800-232-UMAX	40-41
68	Xerox Corporation	800-ASK-XEROX ext. 671	50-51
*	ZDNet	www.zdnet.com	95

*Denotes no reader service number.

ProDirect

Work Faster, Work Smarter.

Never a Surcharge!
No Sales Tax Outside MN
Same Day Shipping

International Orders: 612-884-0012

ProDirect Fax: 612-951-1109

Toll Free Tech Support: 800-594-9952

Order Hours: M-F 8 AM - 7 PM SAT. 10 AM - 3 PM



"Test Drive" any Hard Drive We Sell
for almost 3 months with Our Unbeatable
90 Day Performance Guarantee.
Simply put, We want you to have the exact
drive you need for the job, period.

On The Web @ www.pdisales.com

ProDirect E-Mail: info@pdisales.com

90 Day
Performance
Guarantee

800-524-9952

5 YEAR / 24 HOUR REPLACEMENT WARRANTY ON ALL POWER RAID COMPONENTS

SPEED-TUNED HARD DRIVES

At ProDirect we take the time to speed-tune each hard drive to exact manufacturers optimum operating specifications for the Macintosh, and put it through a rigorous test-run inspection routine to insure that it is dialed-in to its peak level of performance. All Hard Drives Include FMB Hard Drive Toolkit PE The Best Available!

Quantum Drives Quantum

F&W* HEAVY FAST & WIDE

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
080MB	Atlas 7200 RPM	8ms	-	Fast SCSI 2	269	329
080MB	Atlas 7200 RPM	8ms	8.6MB/Sec.	F&W SCSI 2	269	329
2.0GB	Salum	8.5ms	-	Fast SCSI 2	425	485
2.0GB	Atlas 7200 RPM	8ms	-	Fast SCSI 2	495	565
2.0GB	Atlas 7200 RPM	8ms	11.0 MB/Sec.	F&W SCSI 2	555	630
4.5GB	Atlas II 7200 RPM	7.5ms	-	Ultra SCSI 3	845	895
4.5GB	Atlas II 7200 RPM	7.5ms	12.5 MB/Sec.	F&W Ultra SCSI 3	885	960
9.1GB	Atlas II 7200 RPM	7.5ms	-	Ultra SCSI 3	1395	1455
9.1GB	Atlas II 7200 RPM	7.5ms	12.7 MB/Sec.	F&W Ultra SCSI 3	1495	1570

VALUE DRIVES from Quantum

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
65MB	Quantum	10ms	-	Fast SCSI 2	155	215
35MB	Quantum	9ms (5400RPM, 512K Buffer)	-	Fast SCSI 2	N/A	229
280MB	Fireball TM	10.5ms	-	Ultra SCSI 3	245	315
2.1GB	Fireball TM	10.5ms	-	Ultra SCSI 3	275	335
2.2GB	Fireball TM	10.5ms	-	Ultra SCSI 3	375	435

All Value Drives are 4500 RPM, 128KB Buffer with a 3 year manufacturers warranty.

IBM UltraStar Drives IBM

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
2.2GB	UltraStar ES (5400 RPM)	8.5ms	-	Ultra SCSI 3	425	485
4.3GB	UltraStar 2 ES 3430W (5400 RPM)	8.5ms	-	Ultra SCSI 3	595	655
4.3GB	UltraStar 2 ES 3430W	8.5ms	16.2 MB/Sec.	F&W Ultra SCSI 3	695	765
4.5GB	UltraStar 2 XP 3455W (7200 RPM)	8.5ms	-	Ultra SCSI 3	885	945
4.5GB	UltraStar 2 XP 3455W	8.5ms	16.2 MB/Sec.	F&W Ultra SCSI 3	935	995
9.1GB	UltraStar 2 XP 3910W	7.5ms	-	Ultra SCSI 3	1745	1805
9.1GB	UltraStar 2 XP Wide 3910W	7.5ms	15 MB/Sec.	F&W Ultra SCSI 3	1795	1880

All IBM UltraStar 2 drives listed are 7200 RPM, 512K Buffer (unless noted otherwise) and are covered by a five year manufacturers warranty. Work station disk tab entry information available upon request.

Micropolis Drives MICROPOLIS

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
4.3GB	Microp. Tomahawk 4345	7.9ms	-	Ultra SCSI 3	885	945
4.5GB	Microp. Tomahawk 4345AV 7.9ms 2MB CACHE	-	-	F&W Ultra SCSI 3	970	1030
4.5GB	Microp. Tomahawk 4345W	7.9ms	-	F&W Ultra SCSI 3	935	995
4.5GB	Microp. Tomahawk 4345WAV 7.9ms 2MB CACHE	-	-	F&W Ultra SCSI 3	995	1055
3.7GB	Microp. Tomahawk 3387W 7.9ms 16.4 MB/Sec.	-	-	F&W Ultra SCSI 3	1395	1455
9.1GB	Microp. Tomahawk 3391	7.9ms	-	Ultra SCSI 3	1425	1485
9.1GB	Microp. Tomahawk 3391AV 7.9ms 2MB CACHE	-	-	Ultra SCSI 3	1525	1585
9.1GB	Microp. Tomahawk 3391W 7.9ms	-	-	F&W Ultra SCSI 3	1520	1580
9.1GB	Microp. Tomahawk 3391WAV 7.9ms 2MB CACHE	-	-	F&W Ultra SCSI 3	1495	1570

All Micropolis drives are 7200 RPM, 512K Buffer and covered by a 5 year warranty. Mounting brackets and cables available for all current and former Mac's & Clones.

Barracuda 2 Series Seagate

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
2.5GB	Barracuda ST32171W	8ms	-	Ultra SCSI 3	715	775
2.5GB	Barracuda ST32171W	8ms	17.6 MB/Sec.	F&W Ultra SCSI 3	775	845
4.5GB	Barracuda LP ST34371W	7.9ms	-	Ultra SCSI 3	1110	1180
4.5GB	Barracuda LP ST34371W	7.9ms	17.6 MB/Sec.	F&W Ultra SCSI 3	1175	1245
9.1GB	Barracuda 19171W	7.9ms	-	Ultra SCSI 3	1995	2069
9.1GB	Barracuda 19171W	7.9ms	18 MB/Sec.	F&W Ultra SCSI 3	2075	2175
4.5GB	Cheetah ST34501W	7.9ms	(10,000 RPM)	F&W Ultra SCSI 3	1545	1645
9.0GB	Elite ST410800W (5400 RPM)	11ms	16MB/Sec.	F&W SCSI 2	1875	1975

All Seagate Barracuda 2 Series drives listed are 7200 RPM, 512K Buffer (unless noted otherwise) and are covered by a five year manufacturers warranty.

Fujitsu Drives FUJITSU

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
4.5GB	Speed-Tuned for AV 512K Buffer	-	-	Ultra SCSI 3	835	895
4.5GB	Speed-Tuned for AV 512K Buffer	-	-	F&W Ultra SCSI 3	845	920
9 GB	F2959 Speed-Tuned for AV 8ms 512K Buffer	-	-	Ultra SCSI 3	1465	1525
9 GB	F2959W Speed-Tuned for AV 8ms 512K Buffer	-	-	F&W Ultra SCSI 3	1475	1550

All Fujitsu drives listed are 7200 RPM with a five year manufacturers warranty.

ALL DIGIDESIGN FIRMWARES AVAILABLE

MAC MEMORY

TECHWORKS LIFE TIME WARRANTY

SIZE	168 PIN 60MS	5V	3.3V	SIZE	72 PIN	70MS	60MS
8MB	DIMM	41	51	4MB	SIMM	20	22
16MB	DIMM	75	98	8MB	SIMM	34	37
32MB	DIMM	157	233	16MB	SIMM	78	80
64MB	DIMM	305	399	32MB	SIMM	158	158

*FOR STARMAX AND GATEWAY 200 CPUs

CIRCLE 75 ON READER SERVICE CARD



PowerRAIDS
F&W RAID TOOLKIT
WITH ANY PURCHASE
\$99

Speed-Tuned "38 Special"

ProDirect PDI 3800
Utilizing a 4 Gig Wide
Ultra SCSI Quantum
XP34550W



MACWORLD 2nd Year In A Row!
"Big, fast, at 7200 RPM nicely
priced. Who could ask for
anything more?"
-MacWorld- May 1997

INT. EXT.
\$895 \$970

SyQuest

SyJet
1.5 GB

Removable
with One Cartridge
\$489

Additional Cartridges: \$98

CALL OR SEE US ON-LINE
pdisales.com

Iomega

JAZ
1 GB

Removable
with One Cartridge
Additional Cartridges: \$89

High Performance Value!
SPEED-TUNED
\$845

4.5GB Atlas II
*1024K Buffer +5 Year Warr. +7200 RPM
*AV Configured for Maximum Performance
*Ultra SCSI 3 Performance

YAMAHA CD-R400
8X Reader 4X Writer
\$849

IN STOCK NOW! Pinnacle MICRO
APEX 4.6GB OPTICAL DRIVE
\$1475

*3.5 MB/Sec. Transfer Rate *21ms Seek
*7200 RPM *1024K Buffer *Cartridges: \$225

FAST & WIDE ULTRA SCSI 3 POWER RAIDS

REMUS 1.4 RAID
SOFTWARE
INCLUDED WITH
ALL RAIDS

ALL POWER RAIDS COME PRETESTED AND CONFIGURED WITH SPECIALLY CONFIGURED ULTRA SCSI 3 WIDE AV DRIVES FOR YOUR SPECIFIC NEEDS. ALL YOU DO IS PLUG AND PLAY.

CAPACITY	DRIVES UTILIZED	SCSI ACCELERATOR	ONLY
4.0 Gig	2-Quantum Atlas 2GB	Adaptec 2940 Ultra SCSI 3	1665

SPEED-TUNED 8 GIG PRO POWER RAID SPECIAL

8.0 Gig	2-Quantum PDI 3800's	Adaptec 2940 Ultra SCSI 3	2495
8.0 Gig	Seagate Cheetah	Adaptec 2940 Ultra SCSI 3	3495
18 Gig	Seagate Barracuda	Adaptec 2940 Ultra SCSI 3	4695
18 Gig	Micropolis Tomahawk	Adaptec 2940 Ultra SCSI 3	3995
36 Gig	4-Micropolis Tomahawk 9.1GB	Adaptec 2940 Ultra SCSI 3	7795
56 Gig	Micropolis Tomahawk	Adaptec 2940 Ultra SCSI 3	12495

SCSI ACCELERATORS

adaptec ATTO

ATTO Express PCI Ultra SCSI Single Channel.	315
ATTO DualChannel Express PCI Ultra SCSI 3 40 MB/Sec.	589
F&W Jackhammer Fast/Wide 16BIT SCSI 2 for Nubus Macs.	445
F&W PCI Jackhammer Single Channel PCI	385
ADAPTEC PowerDomain 2940 UWM Single Channel PCI	285
ADAPTEC PowerDomain 3940 UWM Dual Channel PCI	565

TAPE DRIVES

GIGS	PRODUCT	MEDIA	TRANSFER/MIN.	INT.	EXT.
30	Quantum DLT2000XT	DLT	150MB	-	2575
40	Quantum DLT4000	DLT	180MB	-	4195
4	Conner TravanQIC	QIC 80 M	20 MB	-	485
4-8	Hewlett Packard C1533 DAT DDS-2	DAT 120M	60MB	-	895
4-8	Sony 7000 DAT DDS-2	DAT 120M	90MB	-	989
24-48	HP1553 Auto Tape Loader	DAT 120M	60MB	-	2495
5-7	Exabyte 8505XL	8mm	60 MB	1995	2055
14	Exabyte 8700	8mm	60 MB	N/A	1475

MICROPOLIS UNBELIEVABLE AV PERFORMANCE

With 2MB Cache Buffer

Tomahawk
WIDE AV Drives 4.5GB 9.1GB
Fast & Wide Ultra SCSI 3
Internal w/2MB Cache Buffer

POWER MAC SYSTEMS

ALL MAC SYSTEMS FROM PRO DIRECT COME WITH ALL FACTORY STANDARD OPTIONS OR YOU CAN TAKE A CREDIT ON ITEMS YOU WOULD LIKE US TO UPGRADE OR REMOVE.

Apple PowerMac 9500 200MHZ 604e
32MB RAM Tower Atlas 1GB Wide HD
8X CD 2MB VRAM

8500/180 604e 32 MB RAM/1GigWideHD/8XCD/2MB VRAM **\$2299**

9500/180 MP 604e .. 2099

9500/150 604e .. 2099

8500/150 604 .. 2655

8500/120 604 .. 1499

7600/132 604 .. 1639

Umax SuperMac
900L 200MHZ DUAL 604e SUPERMAC
Great for PhotoShop! 32MB RAM Tower Atlas 1GB
Wide AV HD 8X CD 4MB IMS Card 6 PCI Slots

900L/250 604e 32RAM/1GigWideAVHD/8X/8MB IMS/6 PCI **\$4625**

C500L/160 603e 1089

C500L/180 603e 1279

C600L/180 603e 1475

C600L/200 603e 1699

C600L/240 603e 1999

Motorola StarMax
4000 200MHZ 604e
32MB MiniTower
2.5GB HD 8X CD
2MB VRAM 5 PCI

4000/200 604e Desktop16RAM/1.2GigHD/8X/2MB VRAM/3 PCI **\$2195**

3000/180 603e Desktop16RAM/2.5GigHD/8X/2MB VRAM/3 PCI **\$1285**

4000/160 604e Desk .. 1555

4000/160 604e Tower .. 1755

3000/180 603e Tower .. 1455

3000/200 603e Desktop .. 1525

3000/200 603e Tower .. 1725

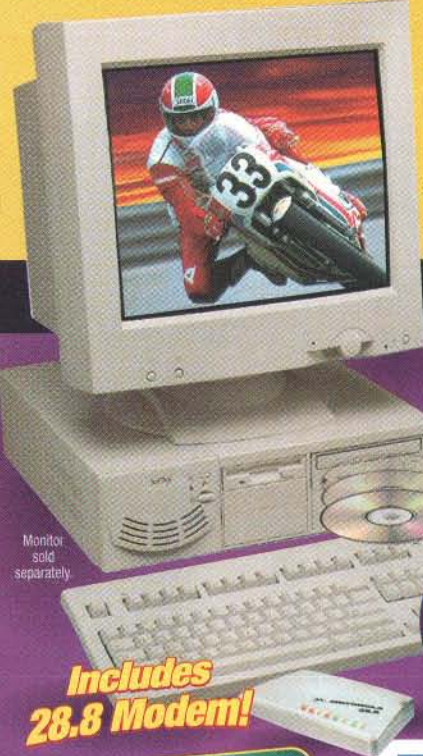
3000/240 603e Tower .. 2085

ProDirect

ProDirect, Inc. 10830 Nesbitt Avenue South, Bloomington, MN 55437

ProDirect is now an IBM Business Partner and we carry a full line of IBM Laptops, Desktop Computers and Accessories.

ALL PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. RETURNED ORDERS ARE SUBJECT TO A RESTOCKING FEE. INTERNATIONAL CUSTOMERS PAY ALL SHIPPING CHARGES. ALL SHIPPING CHARGES ARE NON-REFUNDABLE. TO RETURN MERCHANDISE CALL FOR AN RMA NUMBER. ALL RMA'S MUST BE RETURNED WITHIN 10 BUSINESS DAYS OF ISSUANCE. CUSTOMERS ARE RESPONSIBLE FOR SHIPPING CHARGES TO RETURN PRODUCT.



MacWARE

We carry over 6,000 products for your Mac! Plus a full line

MOTOROLA PRICES SLASHED!

ON 100% MAC-OS COMPATIBLE SUPER SYSTEMS!

AS LOW AS
\$1249!

StarMax 3000/180 Mini-tower	\$1395
Ask for Item # CPU 0537	
StarMax 3000/200	\$1495
Ask for Item # CPU 0449	
StarMax 3000/200 Mini-tower	\$1695
Ask for Item # CPU 0450	
StarMax 3000/240 Mini-tower	\$2195
Ask for Item # CPU 0548	

Monitor sold separately

Includes 28.8 Modem!

Limited Time!
While supplies last!

StarMax 3000/180
180MHz PowerPC, 16MB RAM,
1.2GB hard drive, 8X CD-ROM
only \$1249!
Ask for Item # CPU 0538

3 Ways to Order:

1. Call: 1-800-725-1454
2. FAX: 1-908-905-9279
3. MacWAREHOUSE is now on the



<http://www.warehouse.com>
✓ Hundreds of shareware and demo titles for you to download!
✓ Latest information on the newest products!

1. Our customer service staff is ready to take your order 24 hours a day, 7 days a week.
2. We accept the following major credit cards: Visa, MasterCard, Discover Card/NOVUS, AmEx. Your credit card will not be charged until each item is shipped (no surcharge).
3. CT, IL, NJ and OH residents add applicable sales tax.
4. Overnight delivery just \$3.00 per order up to 5 pounds. For all orders over 5 pounds, shipping is \$1.25 per pound or fraction thereof. (Example: shipping for a 6 pound order is \$7.50).
5. Place your order for "in-stock" items up to 12:00 midnight (weekdays), and we will ship same day for overnight delivery (barring system failure, etc.).
6. Many of our products come with a 30-Day Money Back Guarantee. All items we sell come with the MacWAREHOUSE 30-Day Guarantee Against Defects.

30 DAY Money Back Guarantee

60 DAY Guarantee Against Defects

© Copyright 1997 MacWareHouse, Inc. MacWAREHOUSE and MacWAREHOUSE are registered trademarks and Data Queen WAREHOUSE and MacSystem WAREHOUSE are trademarks of MacWareHouse, Inc. All other trademarks, trade names and product names are the property of their respective owners. All prices shown in U.S. dollars.

UMAX Computer Corporation

SuperMac C500 180MHz



1-Year On-Site Warranty
Jam-packed with 12 FREE software titles!

Monitor not included.

PowerPC	180MHz PowerPC 603e Processor!
only \$1349	16MB RAM (expandable to 144MB)!
	8X CD-ROM Drive! 1.2GB Internal Hard Drive!
SuperMac C500/180	Item # CPU 0590.....\$1349
SuperMac C600 180MHz/603e/1.2GB/16MB/8X CD	
Item # CPU 0479 (with 28.8 modem).....	\$1499
200MHz/603e/2.1GB/16MB/8X CD	
Item # CPU 0478 (with 28.8 modem).....	\$1799
240MHz/603e/2.1GB/24MB/8X CD	
Item # CPU 0533 (with 28.8 modem).....	\$2099

100MB IOMEGA ZIP DRIVE

ONLY \$149.95

LOWEST PRICE EVER!



Includes your first disk FREE!

Ask for item # DRI 1050



Upgrade to NEW PAGEMAKER 6.5

for only **\$99.95**



HTML File Import & Export!
Trade-up from QuarkXPress for only \$129.95! Ask for item # SID 0381.
See or fax us at the left page of this page for a photograph of the original program disk.

SoftWindows 95 4.0



Upgrade for as low as **\$99.95***
Ask for item # UPG 0626
*Serial number required at time of order.

RAM Doubler 2

Triple your memory!
ONLY \$54.95
Ask for item # UTI 0986



GET Marathon Infinity FREE!

when you buy a 12X CD-ROM Drive for only **\$249.95**
Ask for item # BND 1785
*Shipped in promotional packaging on CD-ROM.



NEW VERSION!

Macromedia Director 6

Powerful authoring tool for multimedia and the Internet!
Upgrade for only \$399.95



Ask for item # BND 1895
Qualifying products: Director 5 or earlier. Serial number required at time of order.

APPLE HARD DRIVES

2GB AS LOW AS **\$499**

Interchangeable foot pads make it easy to use vertically or horizontally!
2GB drive: DRI 1336 \$499
3GB drive: DRI 1658 \$599
4GB drive: DRI 1828 \$849



SONY

Trinitron 17" Monitor

\$699

- 15.9" viewable image size
- 1024 x 768 pixels
- Digital controls
- 25mm dot pitch



Ask for item # BND 1774

UPGRADE TO Microsoft Office 4.2.1

FOR ONLY **\$269.95**
Ask for item # SID 0385
PLUS! Essential tools for small business



Microsoft Office: BUS 1015...\$449.95

WAREHOUSE[®]

of Macintosh[™] and Mac OS computers!

Netscape Navigator 3.0

SPECIAL LOW PRICE!
only **\$19.95***
Item # BND 1856
*After \$20 manufacturer's mail-in rebate. Price before rebate is \$39.95. Offer good while supplies last.

ADOBE PHOTOSHOP 4.0

Upgrade only
\$149.95
Ask for item # UPG 0549

DeskWriter 600

B&W: 600dpi! Color: 300 x 600dpi!
\$149.95
HEWLETT PACKARD
Ask for item # INP 0542
*Color printing requires optional color kit—Only \$39.95. Item # PA 0078

Global Village TelePort Platinum Fax/Modem

as low as **\$79.95!** While Supplies Last!
Teleport Platinum 28.8 x 34 only \$79.95. Ask for item # BND 1787
Teleport Platinum 33.6 SpeakerPhone edition, (shown) as low as \$99.95, with any \$100 MacWAREHOUSE purchase. Regular price \$259.95. Must appear on same invoice. Ask for item #AAP 0405

Upgrade WAREHOUSE!

SAM 4.5 Upgrade
Ask for item # UPG 0585 **\$39.95**
Proof of ownership required.
Adobe Illustrator 6.0.1 Upgrade from 5.0
Ask for item # UPG 0222 (CD-ROM) **\$99.95**
Macromedia Director 6 Upgrade
Ask for item # BND 1895 (Mac CD-ROM) **\$399.95**
Ask for item # BN 4119 (Win. CD-ROM)
Macromedia Director Multimedia Studio Upgrade
Ask for item # BND 1893 (Mac CD-ROM) **\$498.95**
Ask for item # BN 4117 (Win CD-ROM)
Microsoft Office 4.2.1 Upgrade
Ask for item # UPG 0237 **\$269.95**
Symantec Norton Utilities 3.2 Upgrade
Ask for item # UPG 0210 **\$39.95**

JAZ DRIVE

Store up to 1GB on one 3.5" cartridge!
\$499.95 includes your first 1GB cartridge*
Ask for item # DRI 1119
*Jaz Tools Utility Software included on first cartridge.
Increases Jaz & Zip performance speeds by up to 40%!
Purchase any Jaz Drive and get Speed Doubler 2 for only **\$29.95**!!
Ask for item # AAP 0388
**Drive must appear on same invoice. Shipped in promotional packaging.
1GB Jaz Cartridges
Ask for item # MED 0177
10+ carts. 5-9 carts. 1-4 carts.
\$89.95 ea. \$99.95 ea. \$124.95 ea.

Jam-packed with **FREE SOFTWARE!**

PowerComputing Lowest Prices Ever!

UP TO 240MHz!
PowerComputing Power Base Series
MAC OS LOW PROFILE OR MINI-TOWER:
• 603e PowerPC Processor • 16MB RAM
• 1.2GB HD • 8X CD-ROM • 2MB VRAM

PowerBase Series

PowerBase Low Profile 180MHz \$1299
Ask for item # CPU 0412
PowerBase Low Profile 200MHz \$1499
Ask for item # CPU 0409
PowerBase Low Profile 240MHz \$1899
Ask for item # CPU 0408
PowerBase Mini-Tower 180MHz \$1399
Ask for item # CPU 0411
PowerBase Mini-Tower 200MHz \$1599
Ask for item # CPU 0410
PowerBase Mini-Tower 240MHz \$1999
Ask for item # CPU 0407

PowerTower Pro

PowerTower Pro 200MHz \$3199
Ask for item # CPU 0564
PowerTower Pro 225MHz \$3699
Ask for item # CPU 0563

180MHz ONLY
\$1299!
Shown: 180MHz PowerBase Mini-Tower ONLY \$1399!

SIMMs

as low as **\$19.95**
1MB 30-pin 80ns SIMMs
Ask for item # CHP 0022

FREE! WITH ANY PURCHASE
Marathon 2: Durandal!
Ask for item# AAA 0442. *You pay only \$2.95 shipping and handling. While supplies last. Shipped in promotional packaging on CD-ROM.

Get a Power User's Tool Kit[®] FREE! with every order!
Demo loads of powerful programs for FREE—some authors ask that you pay a small fee (\$8-\$25). The Power User's Tool Kit is FREE when you order from MacWAREHOUSE. You pay only \$2.95 shipping and handling. If you would like the disk, please ask for item # AAA 0462. All programs work with System 7.



To order, call toll-free 24 hours a day, 7 days a week
1-800-725-1454

FREE CATALOG SUBSCRIPTION! Check the appropriate box(es) to receive your FREE 1-year catalog subscription(s) and mail this coupon to: 1720 Oak Street, P.O. Box 3013, Lakewood, NJ 08701

Name _____
Address _____ Apt. _____
City _____ State _____ Zip _____
(Expect to receive your first issue(s) within 4-6 weeks.)

☐ Yes, send me my FREE Power User's Tool Kit. Enclosed is my check for \$2.95 to cover shipping & handling.
☐ MacWAREHOUSE ☐ MicroWAREHOUSE ☐ DataComm WAREHOUSE ☐ MicroSystems WAREHOUSE

For your FREE Canadian Catalog, call toll-free 1-800-603-5139!

MMU7



FREE CATALOG!



CIRCLE 157 ON READER SERVICE CARD

1-800-217-9153
1-800-217-9153
1-800-217-9153

THE STORAGE LEADER!

HARD DRIVES



1.2GB TEMPEST
128K CACHE
4500 RPM
Internal
\$239



ATLAS II
Internal
\$839

Quantum Tempest drives carry a 3 Year Warranty
Quantum Atlas drives carry a 5 Year Warranty

Description	Model	Access	Interface	RPM	Int	Ext
1.2GB Tempest	QM31280TMS	10.5ms	Ultra SCSI-3	4500	\$239	\$299
2.1GB Tempest	QM32100TMA	11ms	Fast ATA-2 (IDE)	4500	\$249	---
2.1GB Tempest	QM32150TMS	10.5ms	Ultra SCSI-3	4500	\$299	\$359
3.2GB Tempest	QM33200TMA	11ms	Fast ATA-2 (IDE)	4500	\$289	---
3.2GB Tempest	QM33255TMS	10.5ms	Ultra SCSI-3	4500	\$369	\$429
3.8GB Tempest	QM33840TMA	11ms	Fast ATA-2 (IDE)	4500	\$329	---
4.5GB Atlas II	QM34550ALS	8ms	Ultra SCSI-3	7200	\$839	\$899
4.5GB Atlas II	QM34550ALW	8ms	UltraWide SCSI-3	7200	\$999	\$1099
9.1GB Atlas II	QM39100ALS	8ms	Ultra SCSI-3	7200	\$1759	\$1819
9.1GB Atlas II	QM39100ALW	8ms	UltraWide SCSI-3	7200	\$1859	\$1959

WESTERN DIGITAL

Description	Model	Access	Interface	RPM	Int	Ext
2.1GB Enterprise	WDE2170S	8ms	Ultra SCSI-3	7200	\$629	\$689
2.1GB Enterprise	WDE2170W	8ms	UltraWide SCSI-3	7200	\$699	\$799
4.3GB Enterprise	WDE4360S	8ms	Ultra SCSI-3	7200	\$869	\$929
4.3GB Enterprise	WDE4360W	8ms	UltraWide SCSI-3	7200	\$929	\$1029

Seagate

Description	Model	Access	Interface	RPM	Int	Ext
2.1GB Barracuda 4LP	ST32171N	8.5ms	Ultra SCSI-3	7200	\$699	\$759
2.1GB Barracuda 4LP	ST32171W	8.5ms	UltraWide SCSI-3	7200	\$789	\$889
4.3GB Barracuda 4LP	ST34371N	8.5ms	Ultra SCSI-3	7200	\$1039	\$1099
4.3GB Barracuda 4LP	ST34371W	8.5ms	UltraWide SCSI-3	7200	\$1099	\$1199
4.3GB Cheetah	ST34501N	8ms	Ultra SCSI-3	10000	\$1499	\$1559
4.3GB Cheetah	ST34501W	8ms	UltraWide SCSI-3	10000	\$1599	\$1699
9.1GB Barracuda 9	ST19171N	8ms	Ultra SCSI-3	7200	\$1959	\$2019
9.1GB Barracuda 9	ST19171W	8ms	UltraWide SCSI-3	7200	\$1999	\$2099
9.1GB Elite 9	ST410800N	11ms	Fast SCSI-2	5400	\$1999	\$2099
9.1GB Elite 9	ST410800W	11ms	FastWide SCSI-2	5400	\$2099	\$2219
23GB Elite 23	ST423451N	8ms	Fast SCSI-2	5400	\$4299	\$4399
23GB Elite 23	ST423451W	8ms	FastWide SCSI-2	5400	\$4329	\$4449

TOSHIBA

Description	Model	Access	Interface	RPM	Int	Ext
810MB TravelStar	MK1926FBV	12ms	2.5" Fast SCSI	4500	\$549	---

THE CLUBMAC PACKAGE

ClubMac drives are preformatted and thoroughly tested. ClubMac drives include a 30-Day Money Back Guarantee, pre-loaded Apple System software, Charismatic Arubis Formatting Utility software, user's guide, brackets (wide drives include internal ribbon cable), 25/50-pin SCSI cable and power cord for external drives (wide drives include 68/68 pin SCSI cable).

Zip Drive Solutions



\$149⁹⁵
Includes One Free Cartridge
100MB

IOMEGA ZIP DRIVES				
Zip Drive w/one cartridge				\$149 ⁹⁵
Zip Bundle - Zip drive, 11 Disks, Case, 2 Caddy's				\$279 ⁹⁵
Zip Drive Internal - all PowerMacs				\$179
Zip Drive Internal - all PowerComputing/Umax				\$159

ZIP MEDIA				
Format	Part#	Qty 1-2	Qty 3-9	Qty 10+
MAC	1040 1006	\$19 ⁹⁵	\$16 ⁶⁵	\$12 ⁹⁹
PC	1040 1009	\$19 ⁹⁵	\$16 ⁶⁵	\$12 ⁹⁹

Jaz Drive Solutions



\$499⁹⁵
Includes One Free Cartridge
1.0GB

IOMEGA JAZ DRIVES				
Jaz Drive w/one cartridge				\$499 ⁹⁵
ClubMac Jaz Drive w/one cartridge				\$469
Jaz Drive Internal - all PowerMacs				\$399
Jaz Drive Internal - all PowerComputing/Umax				\$379

JAZ MEDIA				
Format	Part#	Qty 1-2	Qty 3-5	Qty 5+
MAC	1040 1015	\$124 ⁹⁵	\$99 ⁹⁵	\$89 ⁹⁵
PC	1040 1037	\$124 ⁹⁵	\$99 ⁹⁵	\$89 ⁹⁵

CLUBMAC CD & CD RECORDABLE

ClubMac 8X

1200KB/sec data transfer
150ms avg access time
Caddy-less design

\$179

ClubMac 2X/4X

CD Recorder

\$399

CLUBMAC CD-ROM READERS	
8X 150ms 1200K/sec	\$179
12X 140ms 1800K/sec	\$229
4 disk 8X CD changer 140ms 1200K/sec	\$279

CLUBMAC CD-RECORDERS	
2X/4X CD-R w/Discribe	\$399
2X/4X CD-R w/Toast Pro 3.0	\$399
4X/6X CD-R w/Toast Pro 3.0	\$859
Yamaha 4X/6X CD-R w/Toast Pro 3.0	\$999

THE CLUBMAC PACKAGE
ClubMac CD-ROM & CD Recorders are thoroughly tested. CD-ROM & CD Recorders include a 30-Day Money Back Guarantee, Charismatic CD AutoCache utility software, user's guide, 25/50-pin SCSI cable, terminator, and power cord.

TAPE BACK-UP

ClubMac DDS-2 DAT Drive

\$879

REMOVABLE

1.5GB syJet 1.5GB

\$499

CLUBMAC TAPE BACK-UP	
4-8GB DDS-2 Compression DAT Drive	\$879
4-8GB DDS-2 Performance DAT Drive	\$999
12-24GB DDS-3 Lightning DAT Drive	\$1249
24-48GB DDS-2 DAT Auto Loader	\$2499
25-50GB 8mm AIT Drive	\$3699

REMOVABLE DRIVES	
ClubMac SyQuest 200MB 5.25"	\$389
SyQuest EZ Flyer 230MB 3.5"	\$299
SyQuest SyJet 1.5GB 3.5"	\$499
Nomai 540MB 3.5"	\$299

Genuine SyQuest Media

Media	Qty 1	Qty 10	Qty 20
44MB	\$40ea	\$39.50ea	\$39ea
88MB	\$44ea	\$43.50ea	\$43ea
200MB	\$69ea	\$68ea	\$67ea
270MB	\$57ea	\$56ea	\$55ea
EZ135MB	\$24.95ea	\$23.95ea	\$23ea
EZ230MB	\$30ea	\$29.50ea	\$29ea
1.5GB SyJet	\$124ea	\$110ea	\$99ea

as low as **\$23**

OPTICAL DRIVES

2.6GB Magneto-Optical Drive

By Maxoptix

\$1699

MCA230LC 230MB Optical Drive

\$299

MEMORY

32-Bit 72pin SIMMS		64-Bit 168pin DIMMS	
4MB	\$25	8MB	\$55
8MB	\$49	16MB	\$115
16MB	\$115	32MB	\$225
32MB	\$225	64MB	\$435

Video RAM		Cache Memory for PowerMacs & PowerPC Performas	
2MB VRAM for ATI Xclaim GA	\$95	256K level 2 cache 7100, 8100	\$73
256K VRAM	\$25	256K 7200, 7500, 7600, 8500	\$75
512K VRAM 8100 & 605	\$30	512K 7200, 7500, 7600, 8500	\$125
1MB VRAM 7200, 7500, 7600, 8500	\$39		

MANY MORE UPGRADES AVAILABLE

Source Code 680697

ORDER 24 Hours A DAY • 7 Days A Week

ClubMac

1-800-217-9153

Order On-Line @ <http://www.club-mac.com>

WARRANTIES: All items manufactured by ClubMac are returned to ClubMac for warranty repair. All other items carry manufacturer's warranty. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. ClubMac extends all other manufacturers' return policies to its customers. Non-ClubMac products carry 30 day money back guarantee when specified. RETURNS: Call for RMA number. Any product that is returned WITHOUT an RMA number will be refused. ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS.



Apple® Computer Corporation

UMAX®
Computer Corporation
Authorized Dealer



MOTOROLA
StarMax
Authorized Dealer



Power Computing
Authorized Dealer

MONITORS

SONY
MultiScan 2005X

- 15.9" Viewable image
- 25mm Aperture Grille Pitch
- Max Resolution: 1024 x 768 @ 75Hz
- 3 Year Limited Warranty parts and labor 2 Year CRT

\$668

S106 1024

ONLY

106 1026	MultiScan 1005X 15", 1024x768	\$359
106 1027	MultiScan 1005X 15", 1024x768 on screen display	\$409
106 1024	MultiScan 2005X 17", 1152x864	\$668
106 1025	MultiScan 2005X 17", 1152x864	\$771
106 1028	MultiScan 3005X 21", 1280x1024	\$1625
106 1031	MultiScan 3005X 21", 1280x1024	\$1445
ADIOS		
016 1031	PressView 175R 17", 1600x1200	\$1799
016 1034	PressView 215R 21", 1600x1200	\$2999
016 1032	PrecisionView 21", 1600x1200	\$1799
ASTEROPS		
033 1031	SuperScan MC20 20", 1600x1200	\$1349
033 1043	SuperScan MC20 21", 1600x1200	\$1669
033 1051	SuperScan MC200 21", 1280x1024	\$625
033 1039	SuperScan MC201HR 21", 1600x1280	\$1899
033 1041	MC21M 21", Monochrome	\$649
IEC		
026 1033	C500 15", 1280x1024 28 dot pitch	\$329
026 1036	M500 15", 1024x768 28 dot pitch	\$385
026 1037	M700 17", 1024x768 28 dot pitch	\$753
026 1031	L1550 21", 1360x1024 28 dot pitch	\$1959
NEWSOMC		
056 1016	17EA w/Speakers 1024x768, 85Hz, 28 dot pitch	\$615
056 1016	17GA w/Speakers 1152x864, 85Hz, 27 dot pitch	\$639
056 1030	PT 775, 17" 1600x1200, 77Hz, 25 dot pitch	\$950
056 1031	PT 813 21" 1600x1200, 85Hz, 28 dot pitch	\$1745
056 1025	PT 815, 21" 1600x1440, 75Hz, 28 dot pitch	\$1669
056 1032	15GA-2, 15" 1024x768, 85Hz, 27 dot pitch	\$399

GRAPHIC CARDS

radius
ThunderPower 30/1600

\$799

SPECIAL PURCHASE!

R013 1086

R013 1086	ThunderPower 30/1600 (PCI)	\$799
R013 1087	ThunderPower 30/1920 (PCI)	\$1199
R013 1088	Thunder 30 (PCI)	\$2899
R013 1018	VideoVision Studio 2.5.1 (NuBus)	\$1399
R013 1079	VideoVision Studio 2.0 (PCI)	\$1495

Xclaim VR 4MB

A143 1023

\$292.95

ATI

A143 1022	XClaim VR™ 2MB PCI graphics card	\$221.95
A143 1023	XClaim VR™ 4MB PCI graphics card	\$292.95
A143 1010	XClaim GA 2MB PCI graphics card	\$235.95
A143 1009	XClaim GA 4MB PCI graphics card	\$339.95
A143 1024	XClaim 3D 4MB PCI graphics card	\$186.95
A143 1025	XClaim 3D 8MB PCI graphics card	\$256.95
A143 1026	XClaim TV™ Tuner	\$89

NUMBER NINE

N030 1003	Number Nine Imagine 128MB 4MB PCI	\$349
N030 1002	Number Nine Imagine 128MB 8MB PCI	\$799

INTEGRATED MICRO SOLUTIONS

I43 1002	Twin Turbo 128M 2MB PCI	\$269
I43 1001	Twin Turbo 128M 4MB PCI	\$399
I43 1003	Twin Turbo 128M 8MB PCI	\$699

DIGITIZING TABLETS

WACOM

ARTZ II 6"x 8"

\$289

W010 1028

LIFETIME LIMITED WARRANTY

30

Edit images, paint, draw and develop your technique to create stunning art with a new Wacom Graphics tablet!

WACOM

W010 1026	ArtPad II 4x5	\$134
W010 1028	ArtZ II 6x8	\$289
W010 1029	ArtZ II 12x12	\$419
W010 1077	ArtZ II 6x8 w/ Photoshop 4.0	\$749

ORDER TODAY!

MODEMS

U.S. Robotics
Sportster For Mac

1020 1021

- V.34 28.8 and 33.6 Kbps
- 14.4 Kbps fax
- V.42/b.42 bis error control & data compression

\$165

\$3.6 kbps

GLOBAL VILLAGE

G050 1025	TelePort 33.6Kbps Internet Edition	\$169
G050 1026	TelePort Speaker Phone Edition 33.6Kbps	\$197
G050 1029	PowerPort Platinum PC Card	\$275
G050 1019	PowerPort Platinum PC Card	\$435
BEST DATA		
B020 1010	33.6FLXMAC FaxModem	\$74.95*
B020 1012	33.6FLXMAC FaxModem	\$99.00*
MEGAHERTZ		
M070 1032	Cruise Card, 33.6 w/ X-Jack, Cellular Ready	\$226
U.S. ROBOTICS		
U020 1025	33.6 Sportster Voice for Mac 33.6 data	\$195
U020 1021	33.6 Sportster for Mac 33.6 data	\$165
U020 1056	56k Sportster Modem	\$219

SCANNERS

VISIONEER
PaperPort Vx

V029 1008

\$249

FREE SCSI ADAPTER

AGFA

A055 1022	Agfa SnapScan for MAC 6000PI 24-Bit	\$299
A055 1011	Agfa StudioScan II	\$499
A055 1015	Agfa StudioScan LE w/PhotoShop LE	\$750*
A055 1017	Agfa StudioScan w/PhotoShop	\$699*
A055 1001	Agfa Arcus II Desktop PC Scanner	\$1699
UMAX		
U010 1061	Vista S6C w/PhotoDeluxe	\$269
U010 1062	Powerlook II w/transparency adapter	\$1395
EPSON		
E045 1026	Epson Expression 636 Upgrade Model	\$799
E045 1027	Epson Expression 636 Executive Model	\$879
E045 1028	Epson Expression 636 Artist Model	\$1299
E045 1029	Epson Expression 636 Professional Model	\$1799
Mitsubiki		
M150 1006	Microtek Scanmaker III w/trans adapter	\$1495
M150 1026	Microtek Scanmaker E3	\$199
VISIONEER		
V029 1008	PaperPort Vx w/FREE SCSI adapter	\$249

PRINTERS

EPSON
Stylus 800

E047 1035

\$449

1440 DPI

EPSON

E047 1034	Epson Stylus 600 (1440 dpi)	\$299
E047 1035	Epson Stylus 800 (1440 dpi)	\$449
E047 1036	Epson Stylus Pro XL w/Live Picture 2.5	\$1499
HEWLETT PACKARD		
H047 1076	HP DeskJet 6700C Inkjet	\$498
H047 1077	HP LaserJet 6MP Printer	\$899
GCC		
G037 1011	XL608, 6 ppm PS	\$2299
G037 1013	XL616, 16 ppm PS	\$2699
G037 1010	XL808, 800 dpi PS	\$2950
G037 1012	XL1208, 1200 dpi PS	\$3999

BATTERIES

BTI Battery
Charger Bundle

B070 1040

\$159

ABSOLUTE BATTERY

A040 1003	PowerBook Battery for 500	\$119.95
A040 1075	Zip Drive Battery 6 volt	\$9.95
BTI		
B070 1061	2 Slot Rapid Charger for 1400	\$119.95
B070 1060	9V Battery for 1400	\$139.95
B070 1046	STD Battery 5300/190	\$79.00
B070 1032	Hi-Cap Battery 5300/190	\$179.95
B070 1033	Mini AC Adapter 5300/190	\$69.00
B070 1049	BTI Battery/Charger Bundle for 5300/190	\$159.00
VST		
V054 1009	1400 Battery	\$109.95
V054 1010	1400 AC Adapter/Charger	\$139.95

SOFTWARE

Adobe
Photoshop 4.0

Upgrade for A030 1001 40U

\$134.95

ADOBE

A030 1003	Illustrator 6.0 full version	\$369.95
A030 1003	Illustrator 6.0 CD upgrade	\$9.95
A030 1001	Photoshop 4.0 full version	\$339.95
A030 1001	Photoshop 4.0 upgrade	\$134.95
A030 1015	PageMaker 6.5 full version Mac/PMac	\$339.95
A030 1015	PageMaker 6.5 upgrade CD	\$89.95
A030 1054	PageMill 2.0 upgrade from v1.0	\$46.95

Apple System 7.6 upgrade

APPLE

A109 1196	System 7.6 upgrade w/AICX	\$69.95
A109 1199	System 7.6 CD or Disk w/AICX	\$94.95
CASADY & GREENE		
C049 1009	Conflict Catcher 4.0	\$58.95
CLARIS		
C089 1002	FileMaker Pro 3.0	\$181.95
C089 1002	FileMaker Pro 3.0 competitive upgrade	\$19.95
C089 1028	ClarisWorks 4.0 w/AICX	\$116.95
C089 1027	ClarisWorks 4.0 upgrade	\$62.95
CONNECTIX		
C149 1020	RAM Doubler 2.0	\$28.95*
C149 1028	Speed Doubler 2.0	\$28.95*
COREL		
C039 1017	COREL DRAW 6.0 Suite for Mac	\$369.95
C039 1016	COREL DRAW 6.0 Suite upgrade for Mac	\$138.95
C039 1016	COREL WordPerfect 3.5 for Mac	\$159.95
C039 1016	COREL WordPerfect 3.5 upgrade for Mac	\$79.00
DENEBA		
D095 1003	Canvas 5	\$379.95
EXTENSIS		
E007 1003	QX-Tools v2.0	\$99.95
E007 1005	PhotoTools v1.0	\$88.95
E007 1009	PhotoTools v1.0 & QX-Tools v2.0 Bundle	\$149.95
FRACAL DESIGN		
F029 1003	Painter 4.0 CD	\$229.95**
F029 1003	Painter 4.0 upgrade	\$119.00
F029 1057	Detailer (sideloader)	\$144.00
F029 1058	Expression (sideloader)	\$144.00
F029 1059	Poser 2	\$119.95
F029 1024	Ray Dream Studio 4.1	\$265.95

** Price after \$100 mail-in rebate from Fractal.

SoftWindows 95 4.0

INSIGNIA

I029 1024	SoftWindows 95 4.0 upgrade from 95 1.0	\$99.00
I029 1025	SoftWindows 95 4.0 upgrade from 3.0	\$149.00
I029 1023	SoftWindows 95 4.0	\$232.95
INTUIT		
I039 1013	Intuit Quicken 7.0 Deluxe Mac CD	\$58.95
I039 1013	Intuit Quicken 7.0 Mac - Disk	\$99.99
I039 1017	Intuit MacIntosh 95 Federal Finl - Disk	\$9.95
MACROMEDIA		
M029 1018	FreeHand 7 upgrade	\$138.00
M029 1004	FreeHand 7	\$374.95
M029 1046	FreeHand Graphics Studio 7 upgrade	\$184.95
M029 1025	FreeHand Graphics Studio 7	\$398.95
M029 1076	Director 5 Multimedia Studio Bundle upgrade	\$499.00
M029 1077	Director 5 Multimedia Studio	\$949.00
M029 1040	Director 5 upgrade w/ Shockwave	\$379.00
MICROSOFT		
M089 1021	Office Standard 4.2.1 CD or Disk	\$449.00
M089 1021	Office Standard 4.2.1 upgrade CD or Disk	\$265.00
M089 1034	Word 6.0.1 full version	\$294.95
M089 1034	Word 6.0.1 upgrade	\$114.95
M089 1025	Excel 5.0 full version	\$294.95
M089 1025	Excel 5.0 upgrade	\$114.95
M089 1040	Works 4.0	\$45.00
NOW		
N069 1013	Now Utilities 6.5	\$75.95
N069 1022	Connect & Up To Date 3.6 Bundle	\$84.95
N069 1015	Up To Date 3.6	\$49.00
QUARK		
Q069 1001	QuarkXPress 3.3 CD	\$658.95

SYMANTEC
SAM 4.5

\$63.95

Maximum Internet Virus protection

SYMANTEC

S210 1004	Norton Utilities 3.2	\$9.95
S210 1004	Norton Utilities 3.2 upgrade	\$7.95
S210 1003	SAM 4.5	\$63.95
S210 1040	Suitecase 3.0	\$45.85

MAC OS SYSTEMS

Power Computing
PowerTowerPro™ 225

\$3695

PRICES SLASHED!

- 225MHz PowerPC 604e Processor
- Upgradable CPU Card
- Dual Processor Support
- Up to 1GB Memory
- AV Capable Hard Drive
- Ultra SCSI/RAID Options
- 8X CD ROM Drive
- 1MB Level 2 Cache included
- 8MB 128-Bit Graphics Accelerator
- 6 PCI Slots
- 9 Drive Bays
- Interleaved Memory
- Dual SCSI, Fast Internal 10MB/s

*Monitor sold separately

P512 1009	PowerBase 180LP 603e, 180MHz, 16MB RAM, 1GB HD, 8X CD, 1MB VRAM, 3 PCI Slots	\$1295*
P512 1010	PowerBase 200LP 603e, 200MHz, 16MB RAM, 1GB HD, 8X CD, 1MB VRAM, 3 PCI Slots	\$1495*
P512 1011	PowerBase 240LP 603e, 240MHz, 16MB RAM, 1GB HD, 8X CD, 1MB VRAM, 3 PCI Slots	\$1895*
*Mini tower version available for \$100 more		
P512 1029	PowerCenter 150LP 604, 150MHz, 16MB RAM, 1GB HD, 8X CD, 1MB VRAM, 3 PCI Slots	\$1695
P512 1024	PowerCenter 150M 604, 150MHz, 16MB RAM, 1GB HD, 8X CD, 1MB VRAM, 3 PCI Slots	\$1795
P512 1028	PowerCenter 180 604, 180MHz, 16MB RAM, 2GB HD, 8X CD, 1MB VRAM, Mini Tower	\$2159
P512 1012	PowerTowerPro 200 604e, 200MHz, 16MB RAM, 2GB AV HD, 8X CD, 8MB VRAM IMS card, 6 PCI Slots	\$3195
P512 1001	PowerTowerPro 225 604e, 225MHz, 32MB RAM, 2GB AV HD, 8X CD, 8MB VRAM IMS card, 6 PCI Slots	\$3695

UMAX Computer Corporation

SuperMac Systems

Up to 250MHz PowerPC

Starting at \$1299

*After \$50.00 mail-in rebate. Expires 4/15/97.

After \$50.00 mail-in rebate. Expires 4/15/97.		Monitor sold separately
U012 1021	SuperMac C500L, 180MHz 603e, 16MB RAM, 1.2GB HD, 8x CD, 1MB VRAM, Desktop Design	\$1299
U012 1015	SuperMac C600L, 180MHz 603e, 16MB RAM, 1.2GB HD, 8x CD, 28.8 Modem, Minitower	\$1499
U012 1016	SuperMac C600L, 200MHz 603e, 16MB RAM, 2.1GB HD, 8x CD, 28.8 Modem, Minitower	\$1699
U012 1018	SuperMac C600L, 240MHz 603e, 24MB RAM, 2.1GB HD, 8x CD, 28.8 Modem, Minitower	\$1995
U012 1019	SuperMac J700L, 150MHz 604e, 16MB RAM, 1.2GB HD, 128 IMS Video Card 2MB, 6x CD-ROM	\$2105
U012 1017	SuperMac J700L, 180MHz 604e, 24MB RAM, 2.1GB HD, 128 IMS Video Card 2MB, 8x CD-ROM	\$2499
U012 1020	SuperMac S900L, 250MHz 604e, 32MB RAM, 2.1GB HD, 128 IMS Video Card 8MB, Zip Drive, 8x CD	\$4899
U012 1022	SuperMac S900L, 233MHz 604e, 32MB RAM, 2.1GB HD, 128 IMS Video Card 8MB, 8x CD	\$4999
U012 1007	SuperMac S900L, 200MHz 604e, 32MB RAM, 2.1GB HD, 128 IMS Video Card 4MB, 8x CD	\$3899
U012 1012	SuperMac S900L, 225MHz 604e, 32MB RAM, 2.1GB HD, 128 IMS Video Card 8MB, 8x CD	\$3989
U012 1010	SuperMac S900L DP (2180MHz) 604e, 32MB RAM, 2.1GB HD, 128 IMS Video Card 4MB, 8x CD	\$4899
U012 1019	SuperMac S900L DP (2300MHz) 604e, 32MB RAM, 2.1GB HD, 128 IMS Video Card 4MB, 8x CD	\$4999



your **Macintosh** catalog SuperStore™

PROUDLY SERVING MAC USERS SINCE 1986

We Carry the Full Line of Apple® Macintosh Computers



Over 6000 Products to Choose From! • Cool Bundles and Hot Specials! • Low Prices Everyday! • Overnight Delivery Available

we're open
24 hours a day
7 days a week



Complete Solutions FOR GRAPHICS PROFESSIONALS



**ENTRY
LEVEL**

LEASE*
IT FOR ONLY
\$81/mo

Perfect for desktop publishing!

StarMax 3000DT
with ViewSonic 17GS

- 180MHz PowerPC® 603e processor
- 16MB RAM, expandable to 160MB
- 256K Level-2 RAM cache
- 1.2GB EIDE hard drive
- 8X speed CD-ROM drive
- 3 PCI expansion slots
- 2 ext. drive bays, 1 internal
- 33.6 Kbps ext. Faxmodem

ViewSonic 17GS Display not shown

- 17" display, 16.0" viewable image
- .27mm aperture grille pitch
- 1152x870 max resolution at 75Hz
- TCO, MPR II and Energy Star® compliant



MOTOROLA

Purchase
Price: \$2024
Order #78183



**MID
RANGE**

LEASE*
IT FOR ONLY
\$191/mo

Ideal for digital photography and illustration!

PowerTower 604
with Sony MultiScan 300sf

- 180MHz PowerPC® 604 processor
- 16MB RAM and 2MB VRAM
- 512K L2 RAM cache
- Integrated FPU and 64K on-chip cache
- 2GB 7200 rpm AV drive
- 4X speed CD-ROM drive
- 3 PCI expansion slots

Sony MultiScan 300sf Display not shown

- 20" display, 19.0" viewable image size
- .30mm aperture grille pitch
- 1280x1024 maximum resolution at 80Hz
- TCO, MPR II and Energy Star® compliant



PowerComputing

Purchase
Price: \$4774
Order #78184



**HIGH
END**

LEASE*
IT FOR ONLY
\$246/mo

The ultimate multimedia powerhouse!

SuperMac S900L
with Radius PrecisionView 21

- 200MHz PowerPC® 604e processor
- 32MB RAM, max 1GB!
- 512K L2 RAM cache
- 2.1GB 7200 rpm AV drive
- TwinTurbo 128M Graphics Accelerator with 4MB VRAM
- 8X speed CD-ROM drive
- 6 PCI expansion slots

Radius PrecisionView 21 Display not shown

- 20" display, 19.0" viewable image
- .30mm aperture grille pitch
- 1600x1200 maximum resolution at 69Hz
- TCO, MPR II and Energy Star® compliant

UMAX®

Purchase
Price: \$6139
Order #78185

lomega

Zip Drive

ONLY \$149⁹⁵
#91825



Jaz® Drive

ONLY \$499⁹⁵
#25659



1GB cartridge included! with tools & utilities

Built-in speakers and sharp picture

ViewSonic 17GA PerfectSound™ 17" Multimedia Monitor (16" viewable)

Built-in high fidelity speakers, headphone jack and external microphone port

ONLY \$649⁹⁵
#88429



MAC ZONE EXCLUSIVE!

TelePort Platinum 28.8 Fax/Modem

ONLY \$74⁹⁵
#82065



BLOWOUT!

FACTORY RECONDITIONED 90-day warranty!

*While supplies last. Product shipped in promotional packaging.

Lowest price for 30-bit scanning!

UMAX Astra 600s SCSI-2 Color Scanner

ONLY \$249⁹⁵
#80679



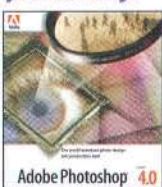
300x600 optical resolution; 4800x4800 interpolated.

THE DESIGNERS' DREAM BUNDLE
A MAC ZONE EXCLUSIVE! SAVE OVER \$9,000!

ONLY \$999⁹⁵
#78277

- QuarkXPress 3.32
- QuarkImmedia
- Strata Vision 3d 4.0
- Strata VideoShop
- Strata MediaPrint

New features improve productivity!



Adobe Photoshop 4.0 Upgrade Batch-process files with a single click!

ONLY \$134⁹⁵
#83084

SAVE Over \$123 on the Bundle!

Mac OS 7.6 Upgrade CD from Any Prior Version & TechTool Pro Bundle



ONLY \$128⁹⁵
#80198

MEMORY UPGRADE

As Low As **\$9⁹⁵ PER MB**

CALL NOW!



THE MAC ZONE • TRUSTED INTERNATIONALLY

Australia • Austria • Belgium • Brazil • Central America • Chile • Colombia • Denmark • France • Germany • Holland • Hong Kong • Indonesia • India • Israel • Italy • Japan • Kenya • Mexico • New Zealand • Poland • Portugal • Singapore/Malaysia • Spain • Sweden • Switzerland • UAE/Middle East • United Kingdom • Venezuela

Corporate Sales 1-800-258-0882
Government Sales 1-800-372-9663

Education Sales 1-800-381-9663
International Sales 1-206-430-3570

A NASDAQ® COMPANY Ticker Symbol: MZON

Copyright © 1997 The Mac Zone® is a registered trademark of Multiple Zones International, Inc. All rights reserved.

Add applicable sales tax (only in OH, WA). Orders placed before 11 p.m. ET for items in stock will be shipped the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Credit cards are not charged until the order is shipped. Not responsible for typographical errors. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand.

Circle 135 on your reader service card

SOURCE CODE MU706

Ordering from the Mac Zone is Easy!
VISIT us @ www.maczone.com
FAX your order to 206.430.3420
CALL US TOLL-FREE!
1-800-436-8000

*Dane Commercial Credit Corp. Business Lease, 36-month, full-payout lease with a \$1 purchase option based on approved credit. Other leasing options available. Call for full details.

MARKETPLACE MacUser

MARKETPLACE

The cost-effective buying arena that provides sellers of Macintosh compatible products 3 advertising options: Premier, Classified and Business Card to meet their specific advertising goals, reaching 529,907 Macintosh Business Buyers. All sections are set up by product category and offer reader service.

PREMIER

The four-color showcase that spotlights leading-edge products and services.

125-132

CLASSIFIED

Flexible-format display advertising that offers diverse sizes plus two and three color options. Section meets dynamic advertising needs for all Macintosh products and services.

133-16

BUSINESS CARD

A forum for innovative, unique, low-cost and hard-to-find Macintosh hardware, software, and miscellaneous products and services.

147

HARDWARE

	Premier	Classified
Bar Coding		133
Boards/Components/Chips	126	133
CD-Rom		134
Computer Systems	127	135
Disk Drives	130	
General	126	
Input/Output Devices		
Multi-Media		
Peripherals	130	143
Powerbook Products	130	

SOFTWARE

	Premier	Classified
Bar Coding		143
Business		145
CAD/ CAM		
CD-Rom		
Communications/Networking	132	
Education	130	143
Entertainment/Games		
Foreign Languages/Translation		
General	132	
Graphics/Fonts		143
Programming Tools/Languages		
Scientific/Engineering		
Adult		146

SERVICES

	Premier	Classified
Consulting/Programming		
Data Conversion/Data Recovery		146
Desktop Publishing		
Digital Output		
Online Services		132
Repair Services		143

MISCELLANEOUS

Accessories
Supplies

ACCOUNT REPRESENTATIVES

Massimo Bufalini 212-503-5941 Southwest	Annuradha Kumar 212-503-3802 Northwest
Eric Birnbaum 212-503-5043 Midwest	Lisala Beatty 212-503-5153 Eastcoast

CENTRAL ADVERTISING STAFF

Robert A. Bader
Vice President, Central Advertising
Ken Holmstrom
Director, Sales & Marketing
Alexandra D'Anna Sales Manager
212-503-5963
Southwest

AD SALES INFORMATION

One Park Avenue, Third Floor
New York, NY 10016
(212) 503-5115 or (800) 825-4ADS

David S. Martinez Sr. Production Coordinator
Debra Barrie Sr. Advertising Coordinator

We've got too much inventory! All new and lower prices on CD-R blanks! Buy 50 CDs at \$5.99 each and we'll give you CD Stomper - the best CD labeling kit on the market - absolutely FREE!

RECORD 4x/6x write read
Recordable CD
NEW! FAST!
200 CACHE BUFFER
250 MS ACCESS SPEED
YAMAHA INSIDE
A/D CD RECORDERS
\$799
INTERNAL
fastest ever!

RECORD 4x/6x write read
JAZ 1GB & CD Recorder Duo!
1GB JAZ & CD-R
-ALL IN 1 UNIT (2 SCSI)
W/SOFTWARE + CABLES
EXTREME
\$899
jaz/cd-r duo

JAZ & DIT
JAZ 1GB Drive & Cartridge
\$499
HIGHEST CAPACITY
FASTEST TRANSFER
LOW COST PER MB
DLT - 15GB compressed to 30GB!
\$2895
also available in 20/40GB tape unit!

CD Recorders
internal external
AVD 4X-W/6X-R Yamaha \$799 \$849
AVD 4X-W/4X-R \$699 \$799
AVD 2X-W/4X-R \$399 \$449
JAZ/CD-R Duo external
JAZ 1GB & 4X/6X Yamaha \$1,299
JAZ 1GB & 4X/4X \$1,249
JAZ 1GB & 2X/4X \$899
Fast Audio Capture & CD Copy 4X-W/12X-R \$1,199
Media
Squest Comp. 44MB \$33
Squest Comp. 88MB \$37
Squest Comp. 135MB \$19.99
Squest Comp. 200MB \$55
Squest 270MB \$55
ZIP 100MB \$14.99
JAZ 1GB \$95
DLT 10/20GB \$39.99
DLT 15/30GB \$44.99
DLT 20/40GB \$106.99
128MB Optical \$9.99
230MB Optical \$14.99
640MB Optical \$34.99
650MB Optical \$29.99
1.2GB Optical \$24.99
1.3GB Optical \$39.99
2.6GB Optical \$69.99
1APEX 4.6GB Optical \$169
comp. = compatible with Squest brand media

AFFEX
720 dpi
CD-R color printer!
FREE
with purchase of printer:
-10 PIECES PRINTABLE MEDIA
-CD STOMPER LABELING KIT
\$1295
720 dpi color!
limited offer

HD ARRAYS
for use with Media 100 QX
6GB
\$1299
MicroNet 4GB
5MB/sec. \$1149
DataDock 8GB* \$3449
20MB/sec., UW
MicroNet 9GB* \$2599
8MS, UW
* includes ultrawide SCSI Card

DUPLICATE
Sidekick 5-CD
Dup. System -
DVD rated
call
Standalone Systems
Mediaform 2001 - 25 CDs
Mediaform 2510 - 25 CDs
< Rebel 4-CD - 16 CDs/hour
Rebel For Audio - DAT to CD

SOFTWARE
CD-Rom
CD-ROM
TOOLKIT

ASTARTE
CD-R: Mac software for writing "RedBook" Audio CDs \$399
CD-Copy: Mac software for bit by bit copying of CDs \$199
APACE: MP3 encoding software for Mac \$399
TOMCAT 3.0: #1 CD-writing software for Mac, improved \$299
SCDD2: with host 3.0, CD-R & CD-Copy \$499

digidesign
AUTOMEDIA III: Mac PCI Audio I/O Card \$499
MASTERLIST: Mac software for writing Pro Audio CDs \$499
SESSION: Audio Edit Software \$199
PROTOOLS: Professional audio, for use with PCI \$499

Data Storage
internal external
JAZ 1GB Drive + Cartridge \$399 \$499
Nikon Beluga 2.6GB LIMDOW \$1,699 \$1,799
Pinnacle Micro APEX 4.6GB \$1,565

Ad Code: CA-106

MEDIASTORE
www.mediastore.com

Product Prices and Availability Subject to Change
800.555.5551
open M-F: 7 a.m. - 6 p.m. (PST) • intl ph. 714-974-5551 • fax 714-279-1690



ADVANTAGE
MEMORY CORPORATION
TOSHIBA

Kingston
TECHNOLOGY
SIMMS

72pin • 60ns/70ns

4 MB.....\$21
8 MB.....\$43
16 MB.....\$88
32 MB.....\$175

POWERBOOK RAM
500/5300/190/2300

4 MB.....\$49
8 MB.....\$65
16 MB.....\$115
32 MB.....\$209
48 MB.....\$379

SIMM 30pin 2k/70/60ns

1MB.....\$9
2MB.....\$18
4MB.....\$22
16MB.....\$95

FUJITSU

MEMORY

**HIGHEST QUALITY
LOWEST PRICES
GUARANTEED!**

SOURCE
COMPUTING

WE WILL BEAT ANY PRICE!

800/900-4599

Voice 954/725-9777 • Fax 954/725-9977
<http://www.sourcecomp.com>

All products feature a 30 day money back guarantee. All memory products are brand new and carry a limited lifetime warranty. Government and educational PO's are welcome. No surcharges on credit cards. Order 24hours! Call for latest pricing as prices are subject to change without notice!

HP **NEC** **SAMSUNG** **OKI** **IBM**

DISCOVER **VISA** **FedEx** **MasterCard** **AMERICAN EXPRESS** **MOTOROLA**

SOUTHLAND
MICRO SYSTEMS
HYUNDAI

TECHWORKS

DIMMS

168pin • 60ns/70ns

8 MB.....\$47
16 MB.....\$85
32 MB.....\$185
64 MB.....\$359

MITSUBISHI

COMPAQ

L2 CACHE

256k - 61/71/81...\$25
256k - 72/75/85...\$49
256k - 72/75/85...\$49
256k - 54/64...\$99
512k - 72/75/85...\$99

VRAM

1MBDIMM 72/75/85...\$25
256k SIMM 61/71/81...\$15
512k SIMM 61/71/81...\$25

CIRCLE 174 ON READER SERVICE CARD

Mariner Write™

...the word processor for the rest of us.

Mariner Write has all the features and speed you want from first-class word processing software, but uses about half the memory and disk space of its closest competitor.

Download a fully functional Mariner Write demo at www.marinersoft.com

\$69.95 list!

Call toll Free 1-888-617-4637 or 502-222-6695

“Mariner Write is software worth treasuring”

—MacUser

★★★★★

- ▶ Low memory footprint! 1,250K for Macs and 1,950K for PowerMacs. Full install less than 2MB!
- ▶ MacLink Plus™ filters let you open and save in Microsoft Word, ClarisWorks, WriteNow, and WordPerfect formats.
- ▶ WorldScript and AppleScript savvy.
- ▶ Import EPS, PICT, JPEG or GIF graphics as objects or characters... text wrap tool!
- ▶ Ten levels of undo
- ▶ Dynamic and accelerated scrolling
- ▶ 80,000+ word spelling dictionary
- ▶ Actual fonts in menu
- ▶ Style sheets and columns
- ▶ Page view option and print preview
- ▶ Footnotes and Endnotes

or Call **ClubMac®** 1-800-258-2622

CIRCLE 175 ON READER SERVICE CARD

ZD Marketplace On The Web

Location: <http://www.zdnet.com/marketplace>

SHOP ON THE WEB, TOO!

Now you can shop Marketplace ads on the Web, as well as in print. Check out ZD Marketplace On the Web where ads from the Marketplace sections of all our publications have been put online. You'll find hundreds of ads for hardware, software, supplies and services, all searchable by product category or key word terms. Search by specs, brand names, manufacturer, etc., and you'll find out who is selling what you want to buy.

<http://www.zdnet.com/marketplace>

ZD Marketplace™
ON THE WEB

POWERtools

MacOS Clones

Base Systems 0 / 0 / floppy

3180 603e/180 \$ 999

3200 603e/200 \$1099

3240 603e/240 \$1299

4200 604e/200 \$1499

All infiniti series computers can be upgraded to faster processors and even CHRP!

Start here

And Add One of These **6 NEW** Bundles

MacUser May 1997 CPU Scores

Infiniti 4200 Pro 419

SuperMac S900/225 410

Infiniti 4200 Power Macintosh 9500/200 409

SuperMac S900/200 408

Infiniti 3240 Power 374

StarMax 4000/200MT 367

M*Power 604e200 365

PowerBase 240 309

SuperMac C600/240 299

Manufactured with the finest quality components.



Powered by Motorola PowerPC

POWERtools

SMART BUNDLE \$500

- 1 16MB RAM
2.1GB Hard Drive
8X CD Rom
2MB VRAM
256k L2 Cache
ADB KB & Mouse

PRO BUNDLE \$950

- 2 32MB RAM
3.2GB Hard Drive
8X CD Rom
2MB VRAM
512k L2 Cache
ADB KB & Mouse

ELITE BUNDLE \$1499

- 3 32MB RAM
3.2GB Hard Drive
8X CD Rom
4MB 3D Video Card
2MB VRAM
512k L2 Cache
ADB KB & Mouse
10-Base-T Ethernet
33.6 Fax / Modem

SERVER BUNDLE \$2175

- 4 32MB RAM
3.2GB Hard Drive
8X CD Rom
2MB VRAM
512k L2 Cache
ADB KB & Mouse
100-Base-T Ethernet
AppleShare

dvp-1 (digital Video) \$1599

- 5 32MB RAM
3.2GB SUPER-FAST DRIVE
8X CD Rom
4MB Video SGRAM
512k L2 CACHE
ADB KB & MOUSE
MIRO MOTION DC-20 CARD

dvp-2 (digital Video) \$2999

- 6 32MB RAM
3.2GB SUPER-FAST DRIVE
8.4GB FAST/WIDE SCSI RAID
FAST SCSI-II PCI CARD
8X CD Rom
4MB Video SGRAM
512k L2 CACHE
ADB KB & MOUSE
MIRO MOTION DC-20 CARD

All systems include MacOS, 1.44 floppy drive & Tower Case

tel: **800-891-4307**

512-891-0646 Email: sales@pwrtools.com

fax: 512-476-6399 url: www.pwrtools.com

CALL FOR LATEST PRICES!



SUPER HOT DEALS

**we beat any price \$\$\$\$
advertised in this magazine!**

Website: www.applemacnet.com • Fax-on-demand (305)-718-8896



APPLE COMPUTERS

7300/180MHz



180 MHz

2GB

256

FOR ONLY \$2,099.

7200 120MHz/16MB/1.2GB/8XCD/1MBVR.....	\$1,199.00
8500 180MHz/32MB/2.0GB/8XCD/2MBVR.....	\$2,499.00
9500 150MHz/16MB/2.0GB/CD/.....	\$2,449.00
9500MP 180MHz/32MB/2.0GB/8XCD/.....	\$3,499.00

NEW! POWER MACS

7300 180MHz/16MB/2GB/12XCD/KYBD.....	\$2,099.00
7300 200MHz/16MB/2GB/12XCD/KYBD.....	\$2,449.00
8600 200MHz/32MB/2GB/12XCD/KYBD.....	\$2,959.00
9600 200MHz/32MB/4GB/12XCD/KYBD.....	\$3,439.00

POWERBOOK

NEW! 3400/180MHz 1400cs

•Power PC 603e
•180MHz
•16MB Memory
•1.3GB HD
•6X CD
•256k L2 cache

FOR ONLY \$4,659

FOR ONLY \$2,059.

PowerBook1400cs/117MHz/16MB/750MB/6XCD/11.3" Dual-Scan Displ.....	\$2,499.
PowerBook1400c/117MHz/16MB/1.0GB/6XCD/11.3" Active Matrix Displ.....	\$3,299.
PowerBook1400c/133MHz/16MB/1.0GB/6XCD/11.3" Active Matrix Displ.....	\$3,899.
PowerBook3400c/200MHz/16MB/1.3GB/6XCD/11.3" Active Matrix Displ.....	\$4,999.

APPLE SERVERS

7250/120MHz

- 16MB/2.0GB/8XCD/256k-L2
- Ethernet AAUI and 10baseT
- More than \$4000 in bundled Software.



FOR ONLY \$1,699.

WorkGroup Server Solution

7250/120MHz/16MB/2.0GB/8XCD.....	\$1,699.00
----------------------------------	------------

8550/200MHz/32MB/2.0GB/8XCD/DAT.....	\$4,399.00
--------------------------------------	------------

Internet Server Solution

7250/120MHz/16MB/2.0GB/8XCD.....	\$2,099.00
----------------------------------	------------

8550/200MHz/32MB/2.0GB/8XCD.....	\$3,999.00
----------------------------------	------------

Apple Share Server Solution

7250/120MHz/16MB/2.0GB/8XCD.....	\$2,499.00
----------------------------------	------------

8550/200MHz/32MB/2.0GB/8XCD/DAT.....	\$5,399.00
--------------------------------------	------------

Software Bundle Includes: File Wave / Now Contact/Virex Now Up-To-Date

/Net Octopus/Viper Instant Access/Skyline/Satellite 4 Sight Fax Server.

*Software Bundle may vary over the life of this product.

MEMORY

16 MB



As low as

\$89.

DIMMS

8Megabytes.....\$39.00

16Megabytes.....\$89.00

32 Megabytes.....\$179.00

64 Megabytes.....\$349.00

SIMMS

8Megabytes.....\$39.00

16Megabytes.....\$89.00

32 Megabytes.....\$179.00

MONITORS

Apple 15AV*



ONLY \$399.

Apple

Multiscan 1705.....\$629.00

Multiscan 1710.....\$779.00

Multiscan 1710AV.....\$859.00

Multiscan 20".....\$1,669.00

Sony

100SX 15".....\$379.00

100SI 15".....\$429.00

200SX 17".....\$639.00

200SI 17".....\$929.00

Se2 20".....\$1,589.00

SI2 20".....\$1,799.00

SCANNERS

Scanmaker E3



ONLY \$179.

Agfa

SnapScan.....\$299.00

StudioStar.....\$699.00

Arcus II.....\$1,699.00

Microtek

ScanMaker E6.....\$449.00

ScanMaker III.....\$1,299.00

Lacie

silverscanner Pro

ONLY \$399

Silverscanner IV.....\$1,199.00

PRINTERS

Color Stylewriter

1500

ONLY \$149.

Apple

Color StyleWriter 2500.....\$289.00

Laserwriter 4/600.....\$779.00

Laserwriter 12/660.....\$4,999.00

Laserwriter 12/640.....\$1,439.00

HP

DeskJet 870CXI.....\$465.00

DeskJet 870Cse.....\$489.00

DeskWriter 1600CM.....\$1,859.00

LaserJet 5MP.....\$1,019.00

LaserJet 6MP.....\$919.00

Epson

Stylus Color 600.....\$289.00

Stylus Color 800.....\$339.00

Stylus Color 1500.....\$939.00

Stylus Color Pro.....\$389.00

Stylus ColorPro XL.....\$1,639.00

Tektronix

Phaser 140i.....\$1,479.00

Phaser 350.....\$3,199.00

SOFTWARE

Quark Xpress

V3.32



PRICE \$619.

Adobe Systems

PageMaker 6.5.....\$399.00

Photoshop 4.0.....\$399.00

Illustrator 6.0.....\$349.00

Page Mill 2.0.....\$99.00

Premiere 4.2.....\$599.00

Macromedia

Director.....\$799.00

Free Hand..V7.0.....\$199.00

Specular

3D Web Workshop.....\$139.00

Infini-D 2.5 (3D/Animat.).....\$569.00

LACIE

2.1GB Ext.HD



Only \$399.

Products

CD-ROM/CD-R

8X/6X CD-R w/Toast 650MB/90m.....\$399.00

4X/6X CD-R w/Toast 650MB/20m.....\$759.00

12X CD-ROM.....\$229.00

8X 4CD's external autoloader 8X.....\$289.00

Backup Drives

4GB Travan 4.8GB.....\$479.00

8GB DAT DDS-2..SDT5000.....\$939.00

8GB Turbo-DATDDS-2..SDT7000.....\$1,039.00

12GB DAT DDS-3..SDT9000.....\$1,399.00

25GB SDX 300.....\$4,599.00

30GB DLT Quantum w/tape 8.....\$2,759.00

40GB DLT Quantum w/ape 8.....\$4,599.00

*All Backup drives come w/SCSI ca. and Retrospect.

Magneto/Opticals

640MB Fujitsu 640 Optical.....\$479.00

2.6GB Sony 2.6GB Optical.....\$1,849.00

MEDIA

IONEGA ZIP DRIVE

FOR ONLY \$133.



Iomega

Drive Cartridge

ZIP.....\$133.00.....\$14.00

Syquest/Microtech

Drive Cartridge

EZ 135.....\$109.00.....\$19.00

EZFlyer 230.....\$259.00.....\$23.00

88 Megabytes.....\$44.00

200 Meg.....\$339.00.....\$59.00

270 Meg.....\$219.00.....\$46.00

IONEGA JAZ

No Cartridge



ONLY \$369.

JAZ Ext. w/3 Cart.....\$589.00

JAZ Int. w/Brackets.....\$339.00

JAZ 1GB Cartridge.....\$87.00

MODEM

SUPRA 33.6

FOR ONLY \$109.



Farallon

Netopia™ ISDN.....\$289.00

Netopia 440 Internet r.....\$599.00

Global Village

Telep. Platinum 36.6.....\$165.00

Telep. Speakerph 33.6.....\$149.00

Platinum PC Pro.....\$439.00

Hayes

*Accura 288 v.34 (Ext.).....\$149.00

*Optima 288 (Ext.).....\$269.00

Supra

SupraSonic™ 33.6.....\$239.00

Supra Fax M 288 33.6.....\$179.00

CALL 1-800-404-9976



SCHOOLS and US GOVERN are WELCOME

Card DISCOVER MasterCard VISA

FAX: (305) 591-4391

Free UPS Shipping When You Order On-Line. Surf to: <http://www.blol.com/macuser/>**Bottom Line Online.**

Your online source for all your Macintosh needs. We offer online ordering of over 6,000 Macintosh and related items.


www.blol.com/macuser

BOTTOM LINE

DISTRIBUTION

Your one source for all your Macintosh needs
1-800-990-5696

POWERtools



*Ratings based on May 97 issue of MacUser magazine



The word is out! The PowerTools Infiniti MacOS clones are rated among the industry elite, and Bottom Line is proud to offer the full line of this HOT new MacOS clone based on the MacUser CPU Score*

PowerTools Infiniti 4200/200Mhz	419
UMAX SuperMac S900/225Mhz	410
PowerMac 9500/200Mhz	409
UMAX SuperMac S900/200Mhz	408
Infiniti 3240/240Mhz	374
StarMax 4200/200MT	367
MPower 604e200	365
PowerBase 240	309
SuperMac C600/240	1299



Ask about our extended warranty programs through servicenet.

Tanzania motherboard design from Apple. We have 4 pre-configured systems for you to choose from, or build your own box and save even more!

Infiniti 3180 180Mhz-603e	999
Infiniti 3200 200Mhz-603e	1099
Infiniti 3200 240Mhz-603e	1299
Infiniti 4200 200Mhz-604e	1499
Infiniti 4200 16/3.2/CD/Kbd/Mse	2199
Infiniti 3200 16/2.5/CD/Kbd/Mse	1999
3200 Digital Video Bundle	1599
4200 Digital Video Bundle	3399

Extras

Internal/External SCSI	49
16x Speed CD-ROM Upgrade	95
512k Cache Upgrade	199
3.2GB High Performance HD	499

lomega

Zip Drive External	139*
Zip Drive Int. 3.5"	149*
ternal Mounting Kits	29
Zip Cartridge 10Pack	119
e External	479
Jaz Drive Internal	379
Jaz Mounting Kits	29
Jaz Cartridge Single	95
Jaz Cartridge 5Pack	489

*Price after rebate

Monitors

Apple 1705 17"	689
Iiyama VisionMaster 17	779
Iiyama VisionMaster 21	1579
ViewSonic 17EA 17"	639
ViewSonic G810 21"	1539
ViewSonic PT770 17"	769.95
Mitsubishi 91TXM	1639
Orchestra 15"	309
Magnavox 14" Color	269

Systems

Apple

PowerMac 4400/200	1689
PowerMac 8500/180	2899
PowerMac 9500/200	3299
PowerMac 7300/180	2256
PowerMac 7300/200	2648
PowerMac 8600/200	3149
PowerMac 9600/200	3638
PowerMac 9600/200MP	4638

PowerBook

3400/180 16/1.3GB	4399
3400/180 16/1.3/CD	4876
3400/200 16/2/CD	5299
3400/240 16/3/12xCD	6499
1400c/133Mhz/CD	3889
1400cs/117Mhz	2476

UMAX

J700/180 24/2/CD	2376
S900/200 32/2/CD	3259
S900/225 32/2/CD	3749
S900/200 Dual	4689
S900/240 32/2/CD	4789

Your Memory Headquarters

16MB DIMM...\$99.00

32MB DIMM...\$189.00

64MB DIMM...\$359.00



We carry only the best memory on the market, Viking, Techworks, Newer, etc. All memory we offer carries a hassle free Lifetime Warranty.

72-Pin SIMMS

4MB / 8MB	37 / 49
16MB / 32MB	109 / 199
61xx/7100 Cache	33.95
256k L2 Cache	129
256k L2 Cache	18
512k L2 Cache	24

168-Pin DIMMS

8MB / 16MB	59 / 99
32MB / 64MB	189 / 359
PCI VRAM 1MB	37
PCI 256k L2 Cache	89
PCI 512k L2 Cache	139
7200 1MB Cache	159

StarMax/Infiniti RAM

8MB / 16MB	59 / 99
32MB / 64MB	209 / 389
256k L2 Cache	129
512k L2 Cache	199

PowerBook RAM

500 Series 16MB	169
500 Series 32MB	249
5300 Series 16MB	139
5300 Series 32MB	269
5300 Series 48MB	349
3400 Series 32MB	269
3400 Series 64MB	699

<http://www.blol.com/macuser>

Browse our huge online catalog, and get free UPS ground shipping on domestic orders over \$100.00, and under 10lbs.

Shipping: \$5, 5 lbs., 2 Days Payment: No credit card surcharge. Corporate POs welcome. Tax: Texas residents add 8.25% sales tax. Prices: Items, prices and availability subject to change. Returns: Call for RMA number. Must be in original condition, opened software is non-refundable. Subject to a restocking fee. Original shipping is non-refundable. Apple brand products are not returnable for refund. Bottom Line Distribution cannot be responsible for errors in typography or photography. Customer Service: 512-892-4090. International Sales: Bottom Line Distribution is committed to the needs of international Macintosh users. We offer discounted rates with DHL. 2 to 3 day delivery to most countries. Dealer inquiries welcome. Language interpreters available. Address: 4544 S. Lamar Blvd., #100, Austin, TX 78745 Fax: 512-892-4455. Hours: MF 9-1 Sat 9-4

BOTTOM LINE
DISTRIBUTION
1-800-990-5696

DIGITAL VIDEO MOTION GRAPHICS

Professional systems tweaked by professionals.

Digital Video Editing

Turnkey pre-configured and tested Workstations

Media 100 qx w/PowerMac 7300/180 48MB RAM/2GB/12XCD	\$5999
Media 100 qx Component w/PowerMac 9600/200 64MB RAM/4GB/12XCD	\$8777
Media 100 LE v3.0 w/PowerMac 9600/200 96MB RAM/4GB/12XCD	\$8999
Media 100 LX v3.0 w/PowerMac 9600/200 96MB RAM/4GB/12XCD	\$12799

Media 100 LE LX XE & XS available in So. Cal only.

Targa 2000 PCI	\$3199
Targa 2000 Pro PCI w/PowerMac 9600/200 48MB RAM/4GB/12XCD	\$7599
Targa 2000 RTX/DTX/SDX	CALL

Targa 2000 RTX, DTX & SDX available in So. Cal only.

ULTRA SCSI ARRAYS

8GB Ultra Wide Seagate ST-34371 Fixed Array	\$2899
18GB Ultra Wide Micropolis 3391 Fixed Array	\$3977

Includes Adaptec/Remus

Killer Mac Systems!

3-D/Motion Graphics/Compositing

Adobe After Effects Production Bundle	\$1499
Boris Effects Ltd./Pro/M100/MCExpress	CALL
Slingshot - Film Conform for Media 100	\$1799
Lightwave 3DMac	\$1299

Call for Special Educational Pricing
Corporate and Government PO's Welcome
Trade names and trade marks are the property of their respective owners
Prices subject to change without notice. Delivery subject to availability

Radius Owners
Save up to \$2225 with
trade up to Media 100!

Intelligent Media

www.intelligentmedia.com

NAB Multimedia World '97
Booth M8349

800 DO MY MAC



CIRCLE 177 ON READER SERVICE CARD

40% Smaller! Worlds Smallest New! Portable Disk Drives



- New 4.3, 2.1, & 1 Gig
- Jaz Remov. 1G.
- SyQuest 270MB & 1.3Gig
- Fuj. Optical 640MB
- Nomi 540MB Cart. Drive
- SCSI-2 & SCSI-2 Wide
- Built in power supply
- No power supply "Bricks"
- High Impact 75 G Shock

Active Term. Switch



No Power Supply Bricks



• 6.7x CD-ROM
• 1.3-2.6 Gig MO

4.3, 2.1, 1Gig., Jaz, SyQuest, Nomi
540, Fuj. 650, opt. Battery
Powered & Win 95 Parallel Port

(408) 983-1127

http://www.libertyinc.com

120 Saratoga Ave. #82, Santa Clara, CA 95051

CIRCLE 178 ON READER SERVICE CARD



EE-509F

EE-507F

EE-504F

We have a full line of
external enclosures
from one 3.50" bay HH
to 20 bay 5.25" HH.



DataPort™
Removable Storage Module

Removable Storage Modules are the solution when it
comes to data security and data sharing.
These RSMs feature SCSI ID's, fan and lockable keys.
Any 3.50" SCSI or IDE HDD compatible.

WETEX INT'L (USA) CORP.

Tel: 818-854-6600 Fax: 818-854-6611

DEALERS PLEASE CALL FOR QUANTITY PRICING
LOOK US UP AT <http://www.wetex.com>

OUTSIDE CALIFORNIA ORDER TOLL FREE ONLY
1-800-759-3839

CIRCLE 179 ON READER SERVICE CARD

PowerBook Solutions

What Every PowerBook
3400 Owner Needs...

Charger 3400

Charges the following battery types:

- Apple Li-Ion Battery
(Ships with PowerBook 3400)
- 190/5300 NiMH Batteries

VST Part # SCH3400.....\$169.95 MSRP



Expansion Bay Hard Drives

VST Expansion Bay Hard Drives
provide 1.4GB and 1.6GB of additional
storage and archiving space.
These new drives are Direct
Memory Access (DMA) compatible
and therefore read and write data
up to twice as fast as non-DMA
compatible drives.

VST Part # EBHD3414.....\$619.95 MSRP

VST Part # EBHD3416.....\$639.95 MSRP

Contact VST for
the full line of
PowerBook
3400 Products.

VST

TECHNOLOGIES
Incorporated

125 Nagog Park • Acton, Massachusetts 01720
(508) 263-9700 • Fax (508) 263-9876 • <http://www.vsttech.com>

BookEndz™ PowerBook™ Docking Stations

Slide in to convert your PowerBook to a complete
desktop system, slide out for portability!

Models for 1400,
5300/190, 500, &
100 series

- Eliminates the need for a
desktop computer
- Fast, reliable connections every time
- Dock/undock in seconds
- Low cost
- Eliminates cable confusion
- Supports all rear ports
- Adds only 3" to rear of
PB when docked



- Free NoteBook Enhancements Catalog
- Foreign telephone adapters
- Monitor stands

Orders: 800-682-4987

Pilot Technologies, Inc., Minneapolis MN Tel: (612) 828-6002 Fax: (612) 828-6806
URL: <http://www.pilot-tech.com/> Email Address: pilottech@aol.com

CIRCLE 180 ON READER SERVICE CARD

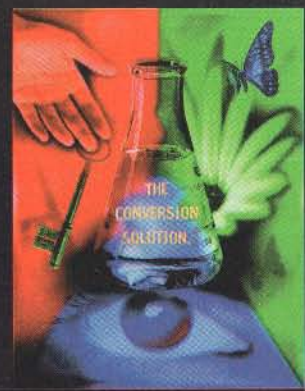
Image Alchemy PS for Macintosh

- Import/Export
EPS PDF PostScript
TIFF GIF PNG
PICT JPEG & 75 more

- Image Compression
- 7 different Dithers
- Scaling
- Palette matching
- Color Conversion
and much more

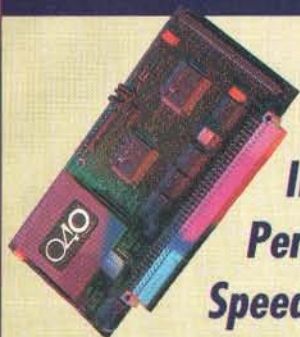
Handmade Software, Inc.

1 800 252 0101 • info@handmadesw.com • www.handmadesw.com



CIRCLE 181 ON READER SERVICE CARD

Run Your Mac Faster and Save!



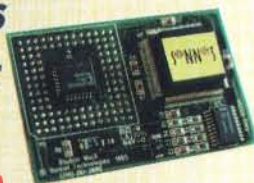
**Accelerate Mac LC,
LC II, Color Classic,
IIfx, IIsi, IIfx, or
Performa 600 to '040
Speed Starting at \$199**

Sonnet Presto™ LC 040 50/25 MHz accelerators increase Mac LC, LC II or Color Classic performance 470% as fast as a stock machine (processor performance, MacBench2). Use RAMDoubler or Virtual Memory to break the 10MB barrier with the Presto LC (except Mac LC, OS 7.1+ req'd). The Presto LC is only \$199, or with hardware Floating Point Unit (FPU) \$249.

The 80/40MHz version for the Mac IIsi*, IIfx, IIfx, or Performa 600 increases processor performance by 250-500%. The 80/40 MHz Presto is only \$299, or with FPU and 128K level 2 cache, \$399.

All Prestos are 100% application software compatible and run through System 7.5.5*. The Prestos are easy to install in the Macs' processor direct slot, and come with clear installation instructions. (*Some configurations are not compatible with RAMDoubler or Virtual Memory. Adapter req'd IIsi)

**Allegro's Fast 68030s
Give New Life to Mac
SE, II, IIfx, LC, LC II,
Color Classic from \$99**



Give your older Mac more muscle. Sonnet Allegros™ are packed with features at bargain prices. The 33MHz Allegro LC for the Mac LC, LC II, Color Classic doubles your cpu speed, adds 16K level 2 cache and includes an FPU—all for only \$149. The 33MHz Allegro SE increases performance 460%, includes an FPU and 4 SIMM slots to expand memory up to 16MB for a bargain \$199. Allegro Mac II, IIfx models double '030 speed to 33MHz for a mere \$99.



**7300-9600 Upgrade
150MHz 604 \$299
200MHz 604e \$899
233MHz 604e \$1299**

Give your Power Mac 7300, 7500, 7600, 8500, 8600, 9500, 9600 a PowerPC 604/604e upgrade. These power-packed upgrades are 100% compatible with your existing software and hardware. Just plug one in and enjoy the productivity you deserve. Add a 1MB cache card and double your performance! *with card trade-in.

Wow! 100BaseTx PCI Ethernet.....Only \$99



**Upgrade Your
PowerBook 520/540
to 100MHz 603e with
8MB Memory for \$399***

This is the genuine Apple Computer upgrade product designed to bring your trusted PowerBook 520 or 540 into the PowerPC generation with a speedy 100MHz 603e PowerPC processor. With this upgrade you can run all native PowerPC applications the way they were meant to be. Upgrade your reliable ethernet-equipped PowerBook to PowerPC, and prepare for the MacOS future. The upgrade includes 8MB of memory and is compatible with your existing RAM expansion board. *Price after a \$100 discount for trade-in of your existing 68LC040 card.

**Run the Fastest
Quadra Ever!
100/50 MHz is
Faster than 840av**



Plug the Sonnet QuadDoubler™ into a Quadra 610, 660av, 700, 900, or Centris 610*, 660av, 650 and run virtually twice as fast as before for only \$399. No software upgrades or changes are required. Just plug the QuadDoubler into your CPU socket and power up your Mac. A CPU extraction tool is even included to simplify installation. The QuadDoubler includes a Floating Point Unit for superfast rendering or calculations. A cache card is also available for the Quadra 700/900 for even more performance. *The Centris 610 QuadDoubler runs at 80/40 MHz and is value-priced at \$299 (without FPU \$199).



**Add Math Coprocessor to
68040 Macs & PowerBooks**

Give your Quadra, Centris, or PowerBook 520/540 a math coprocessor for rendering, Photoshop, CAD, or other Math intensive applications. 25MHz 68040 \$125*, 33MHz 68040 with heat sink \$169*. Add a full 66/33MHz 68040 with FPU to your PowerBook 520 or 540 for \$199*. This upgrade also speeds 520 to 66/33MHz 540 performance. Call for PB190, Duo280 or 68882 FPU. *68LC040 trade-in req'd.

**IMS
Twin
Turbo**



Accelerate graphics 270% in a PCI Power Mac with the fastest video accelerator. Scroll faster. Increase the speed, color depth and resolution on your big monitor. With 4MB/8MB VRAM... \$399/699

Cache Speeds 2X?

True. Apple PowerMac with 1MB cache runs 195% as fast as cache-less (200MHz 604e, MacBench 4).

256K 61/71/72/7500	\$49
512K 72/73/75/76/85/8600	\$99
1M 72/73/75/76/85/8600	\$199
256K 52/6360/54/55/64/6500	\$99
512K 52/6360/54/55/64/6500	\$149



SONNET TECHNOLOGIES, INC.
18004 Sky Park Circle, Irvine, California 92614
714-261-2800 Fax 261-2461 sales@sonnettech.com

800-786-6260
<http://www.sonnettech.com>



VISA and MasterCard no surcharge. We used to have a surcharge; we don't anymore. Government, corporate and education P.O.s welcome. We actually welcome all types of customers, as long as you pay nice to our sales reps, especially Craig, he strives for satisfied customers and he plays hockey. One year limited warranty on all products. If you step on it and break it we limit the warranty, otherwise we don't limit it too much. All returns require an authorization and are subject to a restocking fee. ©1997 Sonnet Technologies, Inc. Sonnet, the Sonnet Logo, Allegro, Presto and QuadDoubler are trademarks of Sonnet Technologies.

Save \$10⁹⁹ When You Register Online! • www.valueweb.net

VALUE WEB'S HOSTING SERVICE IS THE MOST AFFORDABLE WAY TO PUT YOUR WEBSITE ON THE INTERNET

\$19⁹⁵ MO

No Minimum Contract!



- Domain name registration provided (http://www.your_name.com/)
- Access to our SSL secure server
- T3 connection to the Internet
- 1000 Mb of data transfer per month
- E-mail forwarding

- Your own FTP account
- Daily tape backup
- Choice of UNIX and Microsoft® Front Page
- Your own CGI-bin directory
- Anonymous Virtual FTP
- 25 Mb of disk space

- Auto E-mail responders
- Detailed web usage statistics
- Truespeech® server support included (real time audio)
- Same day setup
- POP3 E-mail accounts

ValueWebSM

Ask about our reseller program!

1-888-WEB-HOST-USA

E-mail: sales@valueweb.net • Setup Fee \$20-\$39
www.valueweb.net

30-Day Money Back Guarantee!

MJ497

CIRCLE 182 ON READER SERVICE CARD

Finally! Windows 95 and Macs Share Files and Printers Both Ways

Workgroups and small offices can now operate as efficiently as an enterprise with **PC MACLAN** for Windows 95. Low cost, plug and play installation, Network Neighborhood and long file name support, are just a few of the features that make sharing files, volumes and printers between Macs and PCs a snap.

"For peer-to-peer networking... PC MACLAN 6.0 is the only choice."

—Macworld - Nov. '96

Create your own network or complement almost any pre-existing LAN. Sharing information between Windows 95 and Macintosh users is as easy as working off your local hard drive. Print jobs go to the printer of your choice regardless of its location on the network.

For ordering or information:
800-862-2526
e-mail: sales@miramarsys.com
Web: www.miramarsys.com

Please visit us at these upcoming shows
PC Expo - Booth #556
Macworld - Boston - Booth #460



NOVEMBER 1996
Macworld STAR
Rating
★★★★ 7.5

Miramars Systems, Inc.
©1996 Miramars Systems, Inc. All rights reserved.

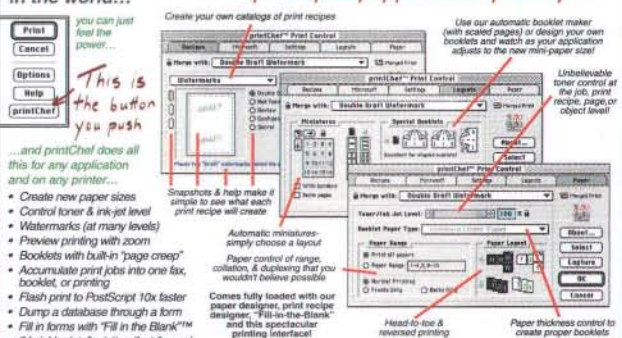
The makers of the most powerful printing software in the world...

LaserMerge Electronic Paper

now bring you the
**most powerful & the
most easy-to-use
printing software
in the world...**

printChefTM

Spices up any application's printing...



For 101 ways to boost the printing power
of any application & printer,
call (800) 648-6840
or try our demo at www.mindgate.com

Introductory priced at \$45
...so that everyone can make their printer sizzle right now!

90-day money-back guarantee

printChef is a print extension that sits between any application and any printer driver... It uses Print Recipes that you design to control any application's output...

System 7+ required! For 680x0 & any PowerMac. Works with ANY printer & ANY application. printChef's miracles require only 32K of memory. QuickDraw GX is NOT required!

List Price: Base unit \$95
Net: \$15-\$25/unit
Worldwide: (615) 937-6800
Fax Orders: (615) 937-6801



MindGate® Technologies, Inc.
164 Oliver Smith Road
Flinville, TN 37335-5335

Order from us Direct VISA or thru MINDWAREHOUSE 800-255-6227
MindGate, LaserMerge, Electronic Paper & their logos are registered trademarks, printChef, its logo, and Fill-in-the-Blank are trademarks. & "This is the Button You Push!" is a trademark of MindGate Technologies.

CIRCLE 183 ON READER SERVICE CARD

CIRCLE 184 ON READER SERVICE CARD

Bar Coding



Call us
for info

- For PC's and Macintosh
- Bar Code Readers
- Portable Readers
- Radio Frequency Readers
- PostScript Bar Code Fonts

- DIRECT FROM MANUFACTURER
- 30 DAY \$ BACK GUARANTEE
- FREE "800" TECH SUPPORT
- IMMEDIATE SHIPPING

800-345-4220

WORTHINGTON
DATA SOLUTIONS

DMS Now Offers
Brand Name
Computer Products



Zip Drive
100 MBs

UMAX
SCANNERS

ALTEC
LANSING

FOCUS
IMAGING

MasterCard VISA

MEMORY
EXPANSION MADE
SIMMple

SIMMS
DIMMS
VRAM
CACHE
CPUS
FPUS
ACCELERATORS
NOTEBOOK MEMORY
PRINTER MEMORY

EDO Available

MAC MEMORY



LIFETIME GUARANTEE

SAMEDAY SHIPPING

GOVERNMENT, EDUCATIONAL, CORPORATE P.O.s w/ approved credit

PRICES UPDATED DAILY - www.datamem.com

SIMMS - DIMMS - VRAM - CACHE - CPUS - FPUS - PowerBook Memory

University, Government & Corporate P.O.s w/ Approved Credit

CALL TOLL FREE - 800-662-7466

BUY • SELL • TRADE MEMORY

• WE CAN **BEAT**
ANY QUOTED PRICE
IN THIS MAGAZINE

• WE CAN PAY HIGHER
THAN ANY ONE FOR
YOUR OLD or
BROKEN MEMORY

Lifetime Warranty
on All Parts

1.800.4.MEMORY

[HTTP://18004MEMORY.COM](http://18004MEMORY.COM)

CIRCLE 221 ON READER SERVICE CARD

OUR PRICES
ARE THE BEST
NO MATTER
WHAT'S BEEN
ADVERTISED
IN THIS
MAGAZINE

AR
COMPUTING

all items
are
new!

1-800-832-8802

603 W. 13th St., Ste. 1-h Austin, TX 78701 512-474-2414 M-S 8-7 CST

VISA • Mastercard • Discover • Prepay
NO SURCHARGE FOR CREDIT CARDS

memory

60ns	SIMM	DIMM
2K	72pin	168pin
16mb	\$ 77	77
32mb	\$154	154
64mb	\$349	309

lifetime warranty!
top quality!

CALL FOR CURRENT BEST PRICES
PRICES SUBJECT TO CHANGE

visit our web site for more products
<http://www.anrweb.com>

CIRCLE 222 ON READER SERVICE CARD

MONITOR SOLUTIONS

<http://www.nashville.net/~griffin>

• **MAC SYNC ADAPTER** sync on green circuitry allows almost all SuperMac, Radius, RasterOps, E-Machines and most other monitors to be used with PowerMac, PCI cards, and AV models.

• **MAC RES ADAPTER** universal resolution adapter selects the proper resolution for your monitor and allows on-the-fly resolution switching.

• **MAC II SERIES** allows all multisync monitors, including Apple Multiple Scan 14 and 15 models to be used with the IICI, IISI & Mac II built in video.

• **MAC TO VGA** universal Mac to PC adapter connects any PC monitor to your Mac.



Dealer and quantity pricing available.

Tel 615/255-0990 • Fax 615/255-8040 • Grifcom@aol.com

RAM CHEAP!

THE FINEST QUALITY WITH
• LIFETIME WARRANTY •

PowerComputing

YOUR MAC
ANSWER FOR...

7200 • 7600 • 8500 • 9500
MONITORS • SOFTWARE
MODEMS • PRINTERS
ALL STORAGE DEVICES

FIBER CANYON

1.800.844.8356

<http://www.fiber canyon.com>

CIRCLE 223 ON READER SERVICE CARD

Find OWC on the Web at <http://www.macsales.com>

Other World Computing

Serving the Mac Universe Since 1988

No Credit Card
Surcharge!

Order Today
Launch Tomorrow

30 PIN SIMMS

72 PIN DIMMS

60ns

4mb 60ns/70ns \$24 8mb \$45

8mb 60ns/70ns \$47 16mb \$95

16mb 60ns/70ns \$97 32mb \$195

32mb 60ns/70ns \$189 64mb \$369

30 PIN SIMMS

1mb \$9 2mb \$19 4mb \$29

VRAM

PMac 72/75/76/8500

1mb \$35

PMac 9500

2mb ATI \$89

CACHE

PMac 72/75/76/8500

256k \$59

512k \$109

AfterBurner804

168Mhz Accelerator for 604 Macs

& Compatibles ONLY \$59.95

800-275-4576

ORDER TOLL FREE TODAY

OWC HARD DRIVES

CAPACITY

INTERNAL EXTERNAL

QUANTUM 270MB \$99 \$149

QUANTUM 540MB \$189 \$239

IBM ULTRASTAR 1Gb 8.5ms \$259 \$309

QUANTUM 1.2Gb 11ms \$229 \$279

QUANTUM 2.1Gb 11ms \$329 \$379

QUANTUM 3.2Gb 10.5ms \$369 \$419

IBM ULTRASTAR 4.3Gb 8.5ms \$649 \$699

SEAGATE AND MICROPOLIS DRIVES \$CALL

CALL FOR IDE AND SCSI HDs

30-Day Money Back Guarantee on All Hard Drives.

SYSTEM 7.1 INSTALLED & 30MB OF SOFTWARE. EXTERNAL

VERSION HAVE PLATINUM CASE W/ DUAL SCSI PORTS,

PUSH-BUTTON SOS! ID & 40WATT POWER.

Other World Computing

224 West Judd Street

Woodstock, IL 60098

International: (815) 338-8685

Fax: (815) 338-4332

Prices and specifications subject to change w/o notice. 15% restocking fee on returned merchandise unless otherwise noted.

CIRCLE 224 ON READER SERVICE CARD

MICRO EXCHANGE™

Since 1985
The World's Source for Renewed Computers!

800-284-9296

Visit us on the web at
<http://www.microexch.com>

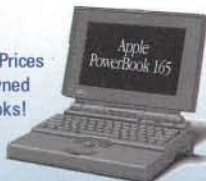
NOTEBOOKS

PowerBook 145, 8/80	\$299
PowerBook 160, 12/120, 14.4 Fax	\$429
PowerBook 165, 12/160, 14.4 Fax	\$459
PowerBook 520C, 20/240, 19.2 Fax	\$999
PowerBook DuoDock	\$169

PRINTERS

StyleWriter (SPECIAL)	\$99
ImageWriter II	\$129
StyleWriter II	\$129
LaserWriter IINT (used)	\$249

The Lowest Prices
on Pre-Owned
PowerBooks!



We Buy New & Used MACs!
(also AST, Compaq, Dell, IBM & Packard Bell)
Fax your list to (972) 488-3248

DESKTOPS

Mac LC, 4/40	\$139
Mac LCII, 8/80	\$169
Mac ILCI, 4/80	\$189
Performa 637CD, 8/350/KB	\$499
Performa 6116, 8/750/CD/KB	\$629
PowerMac 6100/60, 16/350	\$549
PowerMac 7100/66, 16/250	\$649
Apple 14" Color Monitors	from \$199

Call for a list of products from Apple,
AST, Compaq, Dell, IBM & Packard Bell

BUY • SELL • RENT • SERVICE • SYSTEMS • PARTS • PERIPHERALS

All items are represented as used and/or reconditioned & come with a 90-day warranty unless otherwise noted (extended warranties available), items/prices subject to availability & change without notice. Tax/shipping not included. Not responsible for typographical errors. Systems do not include monitors or keyboards unless otherwise noted. Logos, brands, & trade names are reg. trademarks of their respective companies. Visa/Mastercard & CDD accepted. Government, Education & Corporate Purchase orders welcome. © 1997 Micro Exchange Corp., 882 Passaic Ave., Nutley, NJ 07110 (201) 284-1200. MJD697

CIRCLE 225 ON READER SERVICE CARD

MEMORY

MEMORY TECHNOLOGIES



FREE Shipping

With
On-Line Order

<http://www.memory-tech.com>

Complete price list on our WebSite!
High Quality • Lifetime Warranty • 2k Refresh

DIMMS		SIMMS	
32Mb \$175	16Mb \$ 85	32Mb \$170	
64Mb \$330			
3.3V	EDO DIMMS	5V	
32Mb \$179	32Mb \$169		
64Mb \$339	64Mb \$330		

PowerBooks

1400-24MB \$175	5300-24MB \$189
190-24MB \$184	2300-24MB \$175

info@memory-tech.com Fax: 512/451-3323

We accept MasterCard, Visa, American Ex & Discover
Prices may change due to memory market fluctuations

800-950-8411

CIRCLE 226 ON READER SERVICE CARD

OUR GOAL IS TO BEAT OUR COMPETITOR'S PRICES
CALL US LAST FOR A SPECIAL DISCOUNT!

M E M O R Y

30 PINS	72 PINS	168 PIN DIMMS
1 MB	4 MB	4 MB
2 MB	8 MB	8 MB
4 MB	16 MB	16 MB
	32 MB	32 MB
	64 MB	64 MB
		128 MB

VIDEO RAM

256K SIMMS/DIMMS
512K SIMMS/DIMMS

CACHE CARD

256K SIMMS 182MB DIMMS
512K SIMMS

POWERBOOK MEMORY

ALL SERIES AVAILABLE

PRINTER MEMORY

MAJOR BRANDS AVAILABLE

LIFETIME WARRANTY ON MEMORIES

ACCELERATORS

DAYSTAR, SONNET, NEWER

1-800-427-2021

HBR ENTERPRISES

11628 SANTA MONICA BLVD. #201 LA, CA. 90025
M-F 7:30AM - 6PM SAT 10AM - 3PM
FAX 1-310-826-2573
INTERNET 1-310-826-3363
RETURN ITEMS ARE SUBJECT TO APPROVAL AND RESTOCK. FEE. PRICES SUBJECT TO CHANGE

TERMS: VISA, MC, AMX, DISCOVER,

PRE-PAID, C.O.D. & APPROVED P.O.s

<http://www.dnm.com/hbr/>

MEMORY

Quantity Discounts Available

BEST PRICES!

168 Pin DIMMS

8mb	\$ 43
16mb	\$ 78
32mb	\$ 162
64mb	\$ 315

72 Pin SIMMS

4mb	\$ 19
8mb	\$ 36
16mb	\$ 78
32mb	\$ 160

Pwr8k 500/\$300/1400

8mb	\$ 70
16mb	\$ 110
24mb	\$ 215
32mb	\$ 215

30 Pin SIMMS

1mb	\$ 10
2mb	\$ 18
4mb	\$ 28
16mb	\$ 95

3.3V EDO DIMMS

16 mb	\$ 99
32 mb	\$ 199
64 mb	\$ 399

Storage Specials

Quantum 1.0 GB	\$ 275
Quantum 3.2 GB	\$ 399
Cache/VRAM	
61/71/81 256k	\$ 20
72/85 512k	\$ 80
1 mb VRAM	\$ 29

All prices are subject to change. Limited to stock on hand.

WE BUY, SELL & TRADE MACS! CALL (800)80-WE-BUY

1416 Wilshire, Santa Monica, CA 90403

Tel: (310) 394-0001 Fax: (310) 394-7744

visit our web site! <http://www.macsolutions.com>

VISA-AMEX-MC no surcharge • University and School P.O.'s Welcome



(800)809-3289

CIRCLE 227 ON READER SERVICE CARD

Powerbook
Memory
Specialists!

MEMORY

Guaranteed Lowest Prices • Lifetime Warranty

Now
Selling
Printers!

- 168 Pin DIMMS
8/16/32/64 MB \$49/95/189/369
- 72 Pin SIMMS
4/8/16/32 MB \$23/45/95/189
- 30 Pin SIMMS
1/2/4/16 MB \$10/20/29/110
- PowerBook Memory
1400 (16/32/48MB) \$155/269/385
5300/500/190 \$89/149/199/265
160/180/180C/160C \$119/159/210/259
4/6/8/10 MB
ALL DUOS CALL

hp HEWLETT
PACKARD

Best Prices!

- Memory for All Printers

VRAM 256K	\$12	CACHE 256K DIMM	\$54
1MB VRAM	\$39	512K DIMM	\$95
2MB VRAM	\$89	256K (6400)	\$110

4551 San Fernando RD #110,
Glendale, CA 91204
Tel: 818-244-6242
Fax: 818-500-7699
<http://www.eritech.com>
email: eritech@sprynet.com

800-808-6242

We accept P.O.'s from government, schools & qualified firms.
PRICES SUBJECT TO CHANGE

CIRCLE 228 ON READER SERVICE CARD

Design, Print and Apply CD Labels for \$79⁹⁵

1 Create your own
artwork On Your
Computer with
NEATO™ Templates.

2 Print on Any Laser
or InkJet using
NEATO pressure
sensitive labels.

3 Using the NEATO
Label Device, apply
labels...
PERFECTLY EVERY TIME!



Kit Includes: • The Amazing
NEATO CD Label Applicator
• Set of Assorted Labels and
Inserts • CD-FACE including Design
Software (Mac/PC) and Background Art for Labels
and Inserts • Disc and Jewel Case Templates for
Popular Graphics Programs (Mac/PC)

NEATO LLC 250 Dodge Ave • E. Haven, CT 06512
800-984-9800 • 203-466-5170 • Fax 203-466-5178
Europe: +44 (0)990 561571 • Fax +44 (0)181 932 0480
See us at: <http://www.neato.com>
VISA • MC • AMEX

CIRCLE 229 ON READER SERVICE CARD

Q Buy & Sell
RAM Specials
1x8/2x8 \$4.99/\$14.99
4/8/16/32 72-pin NEW
Call for Best Price!

Macs & Peripherals

Perf. 6360 16/1.2gb/CD/28.8 (ref.) \$1099
Perf. 6400/180 16/1.6/8x/CD/Mdm \$1299
Newton 120 MP 1MB RAM/1.3OS \$199
Mac Iic 8/80, 13" RGB & KB \$429
Mac Iicx 8/80, 13" RGB & KB \$379
Mac LC 4/40, 14" NEC & KB \$275
HP ScanJet Iicx 24-bit Scanner \$275
Apple StyleWriter 1200 (new) \$179.95
Apple StyleWriter 1500 (New) \$239.95
LaserWriter IInt/Intx \$399/\$499
Apple ImageWriter II \$74.95
13" RGB Monitors \$185
15" Apple MultiScan Monitor \$389
20" SuperMac-Trinitron \$699.95 and up!
Call for pricing on logic boards, power supplies & hard to find items!!

Que Computers 612-623-0903

Mac/PC, New/Used, Buy, Sell, Upgrade

90-Day Limited Warranty on all pre-owned equipment
Fax 612-623-9155 <http://www.quecomp.com>

CIRCLE 230 ON READER SERVICE CARD

NEXCOMP
BUY-SELL-TRADE

BEST PRICES on Mac CPUs, Parts, & Accessories

CPUs (All items are used unless otherwise noted)

Mac SE 420	\$95	Quadra 605 4/80	\$425
Mac SE30 4/40	\$250	Centris 650 8/200	\$650
Mac II 8/80	\$175	Powerbook 140 4/40	\$399
Mac Ix 8/80	\$225	Powerbook 170 4/40	\$699
Mac Iicx 8/80	\$195	PowerMac G100 8/340	\$775
Mac Iic 8/80	\$205	Other CPUs	Scroll

Memory (Lifetime warranty on all memory)

1MB, 30-pin, 80 ns	\$5	8MB, 72-pin, 70 ns	\$39
4MB, 30-pin, 80 ns	\$27	16MB, 72-pin, 70 ns	\$69
8MB, 30-pin, 70 ns	\$39	32MB, 164-pin DIMM	\$55
4MB, 64-pin, 80 ns	\$55	16MB, 164-pin DIMM	\$89

Parts & Accessories

L2 cache card, 256K	\$40	Logic boards	Scroll
PowerPac accelerator, new	\$225	Power supplies	Scroll
Apple 13" color monitor	\$225	Cables & connectors	Scroll
8-bit video card	\$59	SE, SE30 CRT	\$39
1.5MB floppy drive	\$69	SE, SE30 analog bd.	\$39
215MB SCSI hard drive, 1H	\$215	Mac Plus keyboard	\$25
40MB SCSI hard drive, 1H	\$85	Mac Plus keyboard	\$25
5.25" SCSI card	\$25	hard-to-find parts and accessories!	
A2B mouse, new	\$21		
Apple ext. keyboard II	\$59		
Mac-VGA adapter, new	\$17		

30-day warranty on all used items. Please visit our web site for the latest prices/inventory.

<http://www.nexcomp.com>
TOLL FREE (888) GET-A-MAC
E-mail: sales@nexcomp.com

CIRCLE 231 ON READER SERVICE CARD

COMPU AMERICA

"The Computer Specialist"



PowerComputing

WE CARRY THE WHOLE LINE OF POWERCOMPUTING UNITS!
WE BUILD THE PERFECT SYSTEMS!

PowerComputing

PowerTower Pro 225e
225MHz 604e Full Tower
16/2G/8XCD/8MB VRAM
1MB CACHE, KEYBOARD
Refurbished
One Year On-Site
\$2399

PowerCenter 604/150
150MHz 604 Low Profile
16/2G/8XCD/1MB VRAM
512k CACHE, KEYBOARD
Refurbished
One Year On-Site
\$1395

PowerBase 603e/200
180MHz 603e Mini Tower
16/1G/8XCD/2MB VRAM
Refurb with 1Yr Onsite
MINI TOWER \$1449
LOW PROFILE \$1349

PowerBase 603e/180
180MHz 603e Low Profile
16/1G/8XCD/2MB VRAM
Refurb with 1Yr Onsite
MINI TOWER \$1249
LOW PROFILE \$1149

NEW POWERMACS!

9600/200MP 34/4GIG/12X CALL
7200/120 32/4GIG/12XCD 3299
8600/200 32/2GIG/CD/ZIP CALL
7300/200 32/2GIG/12XCD 2399
7300/180 16/2GIG/12XCD 2099
4400/200 16/1.2/8XCD 1499

POWERMAC

7200/90 8/500/4XCD 949*
7200/120 16/1.2G/4XCD 999*
7200/120 16/1.2G/8XCD 1149
7200/120 16/1.2G/DOS CALL
7500/100 16/1G 1299/1199*
7600/120 16/1G/4XCD 1399*
7600/132 16/1G/CD 1499*
8500/120 16/1G/4XCD 1599*
8500/120 16/2G/4XCD 1699*
8500/132 16/1.2G/4XCD 1799*
8500/150 16/1.2G/8XCD 2095*
8500/150 16/2G/8XCD 1995*
8500/180 32/2G/8XCD 2399*
9500/120 16/1G/8XCD CALL
9500/132 16/2G/8XCD/V 2199*
9500/132 16/2G/8XCD 1899
9500/150 16/2G/4XCD/VID2099
9500/200 16/2G/8XCD 2999
9500/180 MP 32/2G/8XCD 3199
8100/100 8/700 1199*
8100/110 16/2G/4XCD 1799*
7250/120 16/1G/CD 1495
8500/132 24/2GIG 2495
8550/132 24/2G/SHARE 3495
8550/200 32/2G/CD/SHR 4495
WGS9150/120 16/1GIG 2195

MICROTEK

ScanMaker E3 299
ScanMaker E6 547
ScanMaker E6 Pro 829
ScanMaker III 1399

POWERBOOKS

3400C/240 16/3G/12XCD CALL
3400C/200 16/2G/8XCD 4795
3400C/180 16/1.2G/6XCD 4295
3400C/180 16/1.3G 3795
3400C/133 16/1G/CD 3399
1400C/117 16/1G/CD 3199
1400C/117 16/750/CD 2399
1400C/117 12/750 1899
5300C/117 32/1G 2599/2399*
5300C/100 8/600 1795/1695*
5300C/100 16/750 1895/1695*
5300C/100 8/500 1595/1495*
5300/100 8/600 1199/1099*
190CS/66 8/600 CALL
190/66 8/600 899
DUO 2300C 20/1.2GB/14.4 1599
DUO 2300C 8/750/14.4 1299
150 8/250 749

Apple Printers

SW 1200/2400 129*/169*
SW 2200 349
SW 1500 199/149*
SW 2500 279/199*
Apple LW Select 360 899*
Apple LW 4/600PS 749/649*
Apple LW 12/640/PS 1379
Apple LW 12/660PSC 5399
Apple LW 16/600PS 2099

VIEWSONIC

VIEWSONIC 15GA/15ES 439/379
VIEWSONIC 17GA/17EA 679/529
VIEWSONIC 17GS 689
VIEWSONIC PT770 789
VIEWSONIC PT770 789
VIEWSONIC GT800 1299
VIEWSONIC PT810 1699
VIEWSONIC P810 1549
VIEWSONIC P815 1699

PERFORMAS

6400/200V 16/2.4G/CD 1899
6400/200 16/2.4GIG/8XCD 1499
6400/180 16/1GIG/4XCD 1199
6320/120 16/1GIG/4XCD 929*
6300/100 16/1.2G/4XCD 849*
6360/160 16/1.2G/8XCD 989*
6290/100 8/1.2GB/4XCD 849*
6290/75 8/1GIG/CD/TV 799*
6200/75 8/1GIG/4XCD 699*
6116/66 8/700/4XCD 699*
6400DS 12/500/CD/DOS 649*
5320/120 16/1.2G/CD/15" 1249
5260/100 16/800/CD 1099
5200/75 8/800/CD/1099* 849*
631/66 8/500/CD 599*

APPLE Monitors

Apple Ms 14" 299/249*
Apple MS 15" 349/299*
Apple Ms 15AV 399
Apple 1705 17" 599/499*
Apple 1710 17" 699/649*
Apple 1710AV 799/749*
Apple Multiscan 20" 1499/1199*

SONY Monitors

Sony 100SF/100SX 449/379
Sony 200SF/200SX 759/649
Sony 300SF 1579

NEC Monitors

NEC 17XV+ 679/599*
NEC C500 15" 429
NEC C400 14" 329
NEC M500 15" 399
NEC M700 17" 749
NEC M750 17" 899
NEC 21XE 1599
NEC E1100 1649
NEC P1150 1999

HewlettPackard

5M color 6999
5SIMX 3799
5M 1779
6MP 879
4MV 2299
Deskjet 1600CM 1599
Deskjet 870CXi 499

EPSON

STYLUS PRO 500 329
STYLUS COLOR PRO 499
STYLUS COLOR PRO XL 1649
EXPRESSION/636/EXEC 829
EXPRESSION/636/ART 1259
EXPRESSION/636/PRO 1729

RADIUS

PRESSVIEW 21SR 21" 2999
SUPERMATH 21TXL 1199*
PRECISION VIEW 21" 2249
RADIUS 15" COLOR PIVOT 399*

UMAX

VISTA S6E Photo Shop LE 299
VISTA S6 FULL PHOTO 479
VISTA S12 PHOTO SHOP LE 589
VISTA S12 MAC PRO II 669

UMAX COMPUTERS

C500/160 16/1.2/8XCD 1079
C600/180 16/1.2/8XCD 1399
C600/200 16/2G/8XCD 1579
C600/240 24/2G/8XCD 1799
J700/150 16/2G/8XCD 1999
J700/180 24/2G/8XCD 2199
S900/180 32/2G/8XCD 2795
S900/200 32/2G/8XCD 2899
S900/225 32/2G/8XCD 3129
S900/240 32/2G/8XCD 4299

All prices are subject to change without notice. All prices are cash discounted. An Asterisk "*" reflect refurbished.

CIRCLE 233 ON READER SERVICE CARD

Computer Pros
Your Macintosh Source.

We have been advertising for almost five years and could afford to pay for a full page, we'd rather pass the savings on to you.

1-800-329-4MAC (4622)
We will beat any competitors price!

International Orders (305) 825 9574
Web site: <http://www.synaptix-inc.com>
E-Mail: mailman@synaptix-inc.com

28.8KB \$1.095 - 6400/200 16/1.2/8x/CD/28.8 \$1.895. POWERMACS 7200/120MHz 16/1.2gb/8x/12 \$1.299 -

CIRCLE 232 ON READER SERVICE CARD

DATA
MICRO COMPUTER INC.

800-345-1234
[HTTP://WWW.DATAMICRO.COM](http://www.datamicro.com)
DEALERS & INTERNATIONAL SALES WELCOME!
Govt, Univers. & Corp. P.O.'s welcome / Price subject to change

POWERMACS	POWERBOOKS	PERFORMAS
6100/66 8/500/CD 795	1400C 16/1G/CD 3445	LC 580 8/500 895
6100/DOS 16/500/CD 1075	1400CS 16/1G/CD 2645	6116 8/700/CD 795
7100/80 8/700/CD Call	1400CS 12/750 2199	6116 DOS 16/500/CD 1075
7200/120 16/1G/CD 1295	5300CE 32/1Gig 2775	5200 8/500/CD 995
7300/180 16/2G/CD 2069	5300C 16/750 2475	5215/16/1G/CD 1095
7500/100 16/500/CD 1495	5300C 8/500 1975	5260/16/800CD 1275
7600/132 16/1G/CD 1669	5300CS 16/750 1975	5200 8/1G/CD 995
8100/80 8/250/CD 1395	5300CS 8/500 1775	6220TV/16/1G 1949
8100/110 16/2G/CD Call	5300 Mon 8/500 1155	6290 8/1.2/CD Call
8500/150 16/2G/CD 1899	190CS 8/500 1295	6300 16/1G/CD 895
8500/180 32/2G/CD 2399	190 8/500 1280	6360 16/1G/CD 1085
8600/200 32/2G/CD 2899	540C 12/320/M 1945	6400/180/16/1.2CD 1095
9500/150 16/2G/CD 2199	520C 4/240 1445	6400/200/16/2GCD 1675
9500/180 32/2G/CD 3399	520 4/240 895	
9500/200 32/2G/CD 2799		

APPLE	RADIUS	SONY	APPLE PRINTERS
Apple 14" 249	SuperMatch 17" 595		StyleWriter 1200 139
Apple 15" 369	Precision Color 17 735		StyleWriter 1500 229
Apple 17" 675	Intellicolor 20 1299		StyleWriter 2400 249
Apple 20" 1249	Precision Color 21 1495		StyleWriter 2500 269
15" Gray Scale 295	SuperMatch 21TXL 1595		Laser Select 300 469
15" Pivotal/Gray Scale 299	Precision View 1995		Laser 4/600 1269
20" Gray 20GS 695	Sony 17 SF II 795		Laser 4/600 745
21" Gray 21GS 775	Sony 20 SE II 1875		Laser 12/640 1495

CIRCLE 234 ON READER SERVICE CARD

Psst. Hey, Kid! Wanna Get A Free Mac?

Here's where: www.macinstock.com



Phone: (954) 784-1234
Fax: (954) 784-1232
www.macinstock.com

CIRCLE 235 ON READER SERVICE CARD

WE GUARANTEE
THE BEST PRICES!

MediaGuide

3294 S. Acoma St. #2B
Englewood, CO 80110

BUY / SELL / TRADE

Mac Plus 1/0.....\$59	SE 4/40.....\$99	PowerBook 540 20/240/19.2.....\$1399
SE/30 4/40.....\$299	Classic 4/40.....\$199	PowerBook 540c 20/500/19.2.....\$1899
Mac II 4/40/Video.....\$99	LC 4/40.....\$129	PB 5300cs / 5300c / 5300ce.....CALL!
Ilcx 5/40/Video.....\$149	lxi 5/40.....\$159	Apple 13" RGB.....\$199 16" RGB.....\$499
lxi 4/80.....\$229	lxi 16/160.....\$399	Imagewriter II.....\$149 Laserwriter.....\$149
Q605 8/160.....\$459	Q610 8/230.....\$499	Laserwriter IIInt.....\$349 LW IIInt.....\$449
Q630 8/250.....\$649	C650 8/230.....\$549	External hard drive case w/cable.....\$39
Q650 8/230.....\$649	Q700 4/230.....\$499	8-bit NuBus video card.....\$59 24-bit.....\$99
Q800 8/230.....\$699	Q900 8/250.....\$699	Ethernet cards.....\$39 lxi NuBus adapt.....\$39
Quadra 950 8/500.....\$849		2x CD-ROM internal.....\$29 / external.....\$69
Quadra 840AV 8/230/CD.....\$799		800K floppy.....\$25 1.44 floppy from \$69
6100/60 8/230/CD.....\$699		Apple Extended Keyboard II.....\$59
7100/66AV 8/230/CD.....\$999		256K Level-2 cache for 6100/71/81.....\$19
7200/120 8/500/CD.....\$1099		Logic boards & Power supplies — CALL!
PB 140 4/40.....\$399	PB 170 4/80.....\$499	Parts, Accessories, other CPUs — CALL!
PB 160 12/120/14.4.....\$599		MS Word 5.0.....\$39 ClarisWorks 3.0.....\$29
Duo 230 12/120/14.4.....\$549		MS Excel 4.0.....\$49 Other software.....Call!
Duo 280 12/120/14.4.....\$849		30- and 72-pin SIMMs: BEST PRICES!

TOLL FREE (888)466-2271

E-mail: Sales@MediaGuide.com
<http://www.mediaguide.com>
Local: (303) 788-1400 • Fax: (303) 788-0651

CIRCLE 236 ON READER SERVICE CARD

* USED / * REFURB *

Desktop CPU's

Mac SE (800K) 2/40	\$179.00
Mac LC 4/40	\$169.00
Mac IISI 5/80	\$229.00
Mac IIVX 4/80	\$349.00
Quadra 840AV 8/350	\$899.00
6100/60 8/250/CD	\$649.00
*7200/120 16/1.2G/CD	\$999.00
*8500/120 16/2G/CD	\$1499.00
Performa 600 5/80/CD	\$399.00
*Perf 5200/75 8/500/CD	\$999.00
Perf 6116 8/750/CD	\$729.00
*Perf 6214 8/1G/CD	\$899.00
*Perf 6290 8/1.2G/CD	\$999.00

Monitors

Apple 14" Color Display	\$275.00
Apple 14" MultiScan	\$225.00
Apple 14" AV Display	\$279.00
Apple 1710 AV Display	\$599.00

* USED *

Color StyleWriter
2200 or 2400

Your Choice
\$159.00



Limited Quantities
Prices subject to change
Prices represent a Discount
off Full Price
Returns at discretion of Mgmt /
15% Restocking fee

Mac S.A.L.E INTERNATIONAL

USED CPU ONLY SPECIALS



Mac II 4/0-\$79
Mac IIcx 4/80-\$159
Mac Iix 4/80-\$159
Mac Iifx 4/80-\$199
(Monitor, keyboard/mouse additional)

PowerBook 160 4/120
68030 25MHz, Gray Scale
\$499.00



PowerBook 165 4/160
68030 33MHz, Gray Scale

• Add Ram & 14.4
Modem
From Only \$100.00

1-800-729-7031

* USED / * REFURB *

PowerBooks

PB 165C 4/80	\$899.00
PB 170 4/80	\$499.00
PB 180 4/80	\$699.00
Duo 210/230 4/80	\$349.00/\$399.00
Duo Dock/Duo Dock II	\$249.00/\$379.00
Duo Battery Recharger	\$35.00
PB Battery Recharger	\$35.00
PB Int. Fax/Data Mdm	\$25.00

Printers

*StyleWriter 1200 w/ink	\$179.00
Laser Select 300	\$299.00
LaserWriter IINT	\$449.00
LaserWriter Pro 630	\$899.00
LaserWriter Pro 810	\$1499.00

Personal LaserWriter NTR

• New \$499.00

Accessories

Mac IISI NuBus Adapter	\$39.00
Apple Ext. II Keyboard	\$69.00

* NEW *

• Apple CD-600i
4X Tray Loading Int. CD-Rom Drive
ONLY \$99.00

• Personal LaserWriter
NTR Logic Board
With Trade-In ONLY \$79.00

1150 W. Alameda Dr.
Suite 1 & 2
Tempe, AZ 85282
(602) 858-0900
www.macsaleint.com

BIG MAC (800)761-1999

POWERMACS

9600/200	32/4GB/12XCD/KB	3415
9600/200MP	32/4GB/12XCD/KB	4279
8600/200	32/2G/12XCD/ZIP/KB	2933
7300/200	32/2G/12XCD/KB	2499
7300/180	16/2G/12XCD/KB	2150
4400/200	16/1.2gb/8XCD/KB	1575
9500/200	0/0/8xcd	2195
9500/200	32/2/8XCD/2MBATI	2895
9500/180MP	32/2/8XCD	3595
9500/150	0/0/CD	1795
9500/150	16/1/CD/V	2495
9500/132	16/1GB/CD/V	2395
8500/180	32/2/CD	2550
8500/150	16/2GB/CD	2095
8500/132	16/1GB/CD	1995
8500/120	16/1G/CD	1595
7600/132	16/1.2G/8XCD	1675
7600/120	16/1GB/CD	1550
7200/120	16/1GB/8XCD	1195
7200/120	16/1/CD/DOS	1795

POWERBOOKS

3400/200	32/2GB/CD	4950
1400c/133MHZ	16/1g/6XCD	3595
1400C/117MHZ	16/750/6XCD	2195
1400CS/MHZ	16/750/6XCD	2775
1400CS/117MHZ/12/750		1950
5300CE	32/1.1GB	2695
5300C	16/750-8/500	2750/2595
5300CS	8/500	1995
190CS	8/500 REFURB.	995
DUO 2300C	20/1.1GB/M	1750
DUO 2300C	8/750/Mod	1395

PERFORMAS

6400/200	16/2.4/8XCD/M	1650
6400/180	16/1.2/CD/M	1150
6360/160	16/1.2/8xcd/m	1095
6320/120	16/1/CD	1795
5200	8/800/CD	1095

Call for Power Computing,
UMax, Motorola and all printers
1831 Pontius Ave., Los Angeles, CA 90025
Tel: (310) 235-1780 • Fax: (310) 235-1790
Toll Free: (800) 761-1999

CIRCLE 238 ON READER SERVICE CARD

HTTP://WWW.SHREVESYSTEMS.COM

PowerBook 5300c

- 100-MHz PowerPC 603e
- 8MB RAM, 500MB HD
- 16-bit color, active-matrix
- external video support



NEW!

\$1899

Macintosh LC580

COMPLETE!
Includes software
SuperBundle!

8MB RAM
800MB hard drive



NEW!

\$899

Performa 6200/75

COMPLETE!
•software bundle
•15" Multiscan
•keyboard
8/1GB/4XCD
factory refurbished



PowerPC™

\$1099

Performa 5200/75

COMPLETE!
Includes software
bundle and 14.4
internal faxmodem
8/800/4XCD
factory refurbished



PowerPC™

\$999

LOGIC BOARDS ON SALE!

PowerMac 7200/90	\$499	Mac II	\$49
PowerMac 7500/100	\$1199	Mac IIcx	\$149
PowerMac 6100/60	\$499	Mac IIx	\$299
PowerMac 7100/80	\$649	Mac IIcx	\$99
PowerMac 8100/110	\$999	Mac LC	\$89
PowerBook 520	\$399	Mac LCII	\$149
Performa 600	\$129	Quadra 800	\$349
Ilvix	\$149	Quadra 840AV	\$499
		Quadra 950	\$499

SUPERCHARGE YOUR PERFORMA 630!



LOGIC BOARD UPGRADES
Starting at only
\$399
with exchange

630 to 6200/75	\$399
630 to 6300/100	\$599

*working 630 board required for exchange

POWERMAC 7200/75 LOGIC BOARD SALE

\$199
BRAND NEW!

PowerPC™ Logic Board Upgrades

Quadra 950 to WGS 9150 (exchange)	\$999
PowerMac 7200 to 7600/120 (exchange)	\$699
Performa 630 to 6200/75 (exchange)	\$399
Quadra 800 to PowerMac 8100/80 (exchange)	\$599
Quadra 650 to PowerMac 7100/80 (exchange)	\$499

Macintosh CPUs

Performa 635 4/250/CD	\$699
Performa 6200 8/1GB/CD	\$799
Performa 6400/180 16/1.6GB/8XCD	\$1399
Centris 650 4/0 refurbished	\$599
Quadra 660w 4/0	\$599
Quadra 840w 0/0	\$849
Quadra 800 8/0	\$849
Quadra 950 8/0 NEW	\$1099
PowerMac 7600/120 16/1GB/CD	\$1449
PowerMac 9500/132 16/2GB/CD	\$2399
WGS 8150/80 8/500/AppleShare	\$1499
WGS 8150/110 16/1GB/CD/DAT/AShare	\$2599
WGS 9150/80 16/1GB/CD	\$1699

More Logic Board Upgrades

Personal NT to NTR printer upgrade	exch. \$79
LaserWriter IIsv/nrx to IIx	exch. \$399 NT/299 nrx
Mac II or IIx to IIcx	exch. \$249
Ilvix or Ilci to Centris 650	exch. \$299

NuBus Adapters/DOS Cards

Quadra 660AV NuBus Adapter	\$49
Quadra 610 NuBus Adapter	\$49
Quadra 610 DOS Compatibility Card	\$249

Macintosh Quadra 950

- 33-MHz MC68040
- 8/500 configuration
- 1MB VRAM
- 5 NuBus slots
- 16 SIMM sockets
- 3 internal bays

Brand New!



Now Only \$1199

Power Macintosh AV Card

Give your 6100, 7100 or 8100 the gift of video! *6100 requires PDS adapter



2MB AV Card DEMO UNITS \$249

Power Macintosh HPV Card

Original Power Macintosh HPV (high-performance video) card for *6100, 7100 and 8100 series. *6100 requires PDS adapter (\$100 additional).



1MB HPV Card (upgradable to 2MB) DEMO UNITS \$179

Apple TV Tuner System

Watch television broadcasts and capture video stills on your Macintosh Performa (630, 6200, 6300, and 5300 series)



Includes Remote Control DEMO UNITS \$199

11X17 COLOR

- Apple M9500
- 360 dots per inch
- SCSI or parallel interface
- prints transparencies
- supports Mac or Windows



BRAND NEW \$499



PowerPort Mercury for PowerBook 500 series

GlobalFax software included. Features data transfer speeds of 19.2Kbps and fax speeds of 14.4Kbps. Fastest standard modem available for the PowerBook 520

BRAND NEW! \$199
*\$20 Instant Rebate if purchased with a PowerBook 520

Color StyleWriter 1500

- 720x360 dpi
- edge-smoothing
- 3ppm in b/w
- Apple reconditioned



With trade-in \$99
Your trade must be an Apple compatible inkjet printer in good condition. Pre-trade cost on the 1500 is \$199

800/840AV/8100 New Power Supplies

\$199
Original Part!



radius Full Page Display/GS™

640x480 resolution at 75-Hz, compatible with most on-board video. Excellent full-page grayscale display! Features tilt-and-swivel base.



NEW \$229

PowerMac 7500/100

- 100-MHz PowerPC 601+
- 16MB of RAM
- 500MB hard drive
- 4X internal CD-ROM



Brand New \$1449

NEW MICE FOR MACINTOSH

NeXT Mouse	\$39
ADB Mouse	\$49
ADB Mouse II	\$49



SuperDrives 1.44MB



NEW! \$129 AND UP

Apple Color OneScanner	\$349
Apple Color OneScanner 600/27	\$549
UMAX UC840 Scanner NEW	\$449
Epson ES-600C NEW	\$549

Video Cards

E-Machines DoubleColor SX 8-bit NEW	\$129
RasterOps 24MX NEW	\$549
SuperMac PDQ 8*24	\$349
7100/8100 series AV Card	\$249
6100 series AV Card with adapter	\$349
PowerMac HPV VRAM Card (2MB VRAM)	\$249
Apple QuickDraw 3D Accelerator Board PCI	\$349

Monitors

Apple 14" AV NEW	\$349
Apple MultiScan 17"	\$699
Apple 15" MultiScan	\$329
Radius IntelliColor Display/20e	NICE! \$1299
Hewlett-Packard 17" with card	\$499
Hewlett-Packard 20" with card	\$699

Printers

Apple StyleWriter 1200 fac.refurbished	\$159
Color StyleWriter 2200 portable	\$219
Apple Personal LaserWriter LS	\$299
Apple LaserWriter 16/600	\$1399
Apple LaserWriter Select 300	\$379
Apple Personal LaserWriter NTR	\$599
Apple LaserWriter IIvrx	\$749
Apple 11x17 Color Inkjet NEW	\$499
Hewlett-Packard DeskWriter	\$199
Hewlett-Packard DeskWriter C	\$229
Hewlett-Packard DeskWriter 550c	\$229
Hewlett-Packard DeskWriter 560c	\$249

Laser toner cartridges sold separately

PowerBooks

PowerBook 170 4/80	\$649
PowerBook 520 4/240 NEW	\$1099
PowerBook 160 4/80	\$649
PowerBook 150 4/120	\$649
PowerBook 5300c 8/500 NEW	\$1899

WE STOCK MAC PARTS!

1-800-227-3971

*For your protection and ours all credit cards accs. strictly verified *

FAX (318) 424.9771 • TECHNICAL SUPPORT (318) 424.7987

CUSTOMER SERVICE (318) 424.9791 • PURCHASING/INFORMATION (318) 424.9791

1200 MARSHALL STREET • SHREVEPORT, LOUISIANA 71101

READ ME: Products are refurbished unless indicated as "new". Prices reflect a 2% cash discount and are subject to change without notice. Returns are subject to a 15% restocking fee. All trade-ins subject to approval of management.

SHREVE Systems

<http://www.shrevesystems.com>

PowerPC™ is a registered trademark of International Business Machines Corporation

WE SHIP WORLD WIDE

LA

COMPUTER CENTER

CALL (800) 689-3933

UNIVERSITY, SCHOOLS, GOV'T & FORTUNE 1000 P.O.'S ACCEPTED! Call for Quantity Pricing!

INTERNATIONAL ORDERS WELCOME CALL PH. (310) 479-0999 Customer Service (310) 473-2666 FAX (310) 312-9041

POWERMACS

9600/200
32/4GB/12xCD/kybdl
\$3299

KEYBOARD & MONITOR SOLD SEPARATELY

7300/200
32/2GB/12xCD
\$2399

7300/180
16/2GB/12xCD/kybd
\$2099

8500/180
16/2GB/CD w/2MB VRAM
\$2579

8500/150 16/2GB/8xCD
\$2299

KEYBOARD & MONITOR SOLD SEPARATELY

4400/200	16/1.2GB/CD/kybd	\$1499
5260/100	16/800/4xCD	\$1399
6100/66	16/500/CD/DOS	\$1099*
7200/75	8/500/4xCD	\$899*
7200/90	8/500/4xCD	\$949*/1049
7200/120	16/1.2GB/4xCD	\$999*/1149
7200/120/P100	16/1.2GB/8xCD	SCALL
7500/100	16/1G/4xCD	\$1199*/1299
7800/120	16/1.2GB/CD	\$1399*
7800/132	16/2/CD	\$1499*
8500/120	16/1.2GB/4xCD	\$1699*
8500/132	16/1.2GB/4xCD	\$1799*
8500/150	16/2GB/8xCD	\$1995*
8500/180	32/2GB/8xCD	\$2399*
8600/200	32/4xCD/kybd	SCALL
9500/132	16/1GB/4xCD	\$1899
9500/132	16/2GB/4xCD	\$1999
9500/150	16/2GB/4xCD	\$2099
9500/180MP	32/2GB/CD	\$3199
9500/200	00/CD	SCALL
9600/200MP	32/4/12xCD	SCALL

WorkGroup Servers

7250/120	16/1.2GB/CD/NETWK	\$1499
7250/120	16/1.2GB/CD/AS	\$2499
8550/132	24/2GB/CD/AS	\$3499
8550/132	24/2GB/CD/INT	\$2499
8550/200	32/2GB/CD/NETWK	\$3699
8550/200	32/2GB/CD/APPLE SHARE	\$4499

PERFORMAS

6400CD
180MHz! **\$1199**
16/1.6GB/8xCD/28.8Kbps
No Cache, No Monitor

200MHz! **\$1499**
16/2.4GB/8xCD/28.8Kbps
256K L2Cache, No Monitor

5320CD
120MHz!
16/1.2GB/8xCD

CPU, KEYBOARD, MOUSE, & 15" MONITOR **\$1249**

5215/75	8/1GB/4XCD 15"	\$999*
5200/75	8/800/CD/15"	\$899*
6116/66	8/700/2XCD No Mon	\$699*
6200/75	8/1GB/4XCD No Mon	\$699*
6220/75	16/1GB/4XCD NoMon	\$799*
6300/100	16/1G/4XCD NoMon	\$849*
6320/120	16/1.2GB/4XCD TV No Mon	\$929*
6360/120	16/1.2GB/8XCD/No Mon	\$999*
640	12/500/2XCD/DOS	\$749*

ACCESSORIES

MODEMS

Global Village Modems

Mercury19.2Kbps for PB500	\$129
Teleport Gold II 14.4Kbps	\$79
Teleport Platinum 33.6Kbps	\$189
Powerport Gold 14.4Kbps PCMCIA	\$99
Powerport Plat. 28.8Kbps PCMCIA	\$299
Powerport Plat. Pro 28.8+Enet	\$429
Internal 14.4 for Performas	\$49

ACCESSORIES

Imagex ZIP 100 w/1cartridge	\$179
Imagex JAZ 1GB w/1cartridge	\$449
ZIP 10pk Cart/Jaz Cart	\$149/89
Apple 600e 4xCD-Rom External	\$179

SCANNERS

AgfaArcus II w/Trans w/Full Photo	\$1729
AgfaStudioStar w/Full Photo	\$999
AgfaStudioScan Full w/LE Photo	\$649
AgfaSnapScan w/LE Photo	\$299
Umax Vista S8E w/Full Photo	\$299
Umax Vista S12 w/Deluxe	\$549
Umax Vista S12 w/Full Photo	\$729
Umax Gemini V-16	\$1099
Umax Powerlook II w/Trans w/Photo	\$1799
Umax PowerLook 2000	\$4499

POWERBOOKS

Apple Power Book **3400C**
Now In Stock!
240MHz!
16MB/2GB/6xCD
16MB/2GB 160MHz!
\$4795.00 **\$4295.00**

1400C 133MHz 16/1.1GB/6xCD **\$3299**
180MHz! 16/1.3GB **\$3795.00**

1400CS/117	16/750/6xCD	\$2399
1400CS/117	16/750	\$1899
5300CE	32/1GB	\$2599/2499*
5300C	16/750	\$2399/2299*
5300C	8/500	\$1999/1899*
5300CS	16/750	\$1999/1899*
5300CS	8/500	\$1699/1595*
540C	4/320	SCALL
520C	12/240/MOD	SCALL
520	8/240	SCALL
190CS	8/500	SCALL
190	8/500	SCALL
150	8/250	SCALL
DUO2300C	8/750/MOD	\$1099*/1299
DUO2300C	20/1.1GB/MOD	SCALL
DUO250	12/200/MOD	\$799*
DUO280C	12/320/MOD	\$999*
DUO280	12/240/MOD	\$899*

MONITORS

15" MultiScan	\$299*
15"AV MultiScan	\$399
1705 17" MultiScan	\$599
1710 17" MultiScan	\$699
1710AV 17" MultiScan	\$799
20" MultiScan	\$1499/1199*
SONY 100SX/100SF	\$329/339
SONY 200SF/200SX 17"	\$759/649
SONY 300SF 20"	\$1579

PRINTERS

LaserWriter 300/320	\$499/599
LaserWriter Select 360	\$999*
LaserWriter 4/600	\$649*
LaserWriter 12/640 PS	\$1399
LaserWriter 16/600/PS	\$2049
COLOR LW 12/600/PS	\$4499*
COLOR LW 12/660/PS	\$5299
Stylewriter 2500	\$279/199*
StyleWriter 2400	\$169*
StyleWriter 1500	\$249
StyleWriter 1200	\$169/129*
Star Color Printer for Mac	\$89
HP LaserJet 8MP	\$849
HP LaserJet 5M	\$1179
HP LaserJet 5M Color	\$6699
HP LaserJet 4MV	\$2299
HP DeskJet 870Cxi	\$479
HP DeskJet 680C	\$279

Business Leasing Leaders
Lowest Rates, Fastest Approval
GE 4 YEAR ON SITE WARRANTY

Visit Us At Our Web Site <http://www.lacc.com>
24Hrs A Day - On-Line Catalog & Ordering

DHI Product Plus™ Year One NEW OR REFURBISHED PRODUCTS ELIGIBLE FOR COVERAGE

13982 PICO BLVD. WEST LOS ANGELES, CA 90046

20" Sony Color BLOWOUT MODEL!

Model GDM1960 SuperFine
Pitch Trinitron Tube .30 DP

- 1 Year Warranty
- 1024 x 768 Refurbished.
- Tilt Swivel Base
- Only **\$699!**

We also carry 17" Sony
Monitors as low as **\$325**

Call for Details **800-390-7020**
181 Salem Street, Malden, MA 02148

CIRCLE 241 ON READER SERVICE CARD

MacPOWER

Sales & Service, Inc.

BUY • SELL • TRADE
UPGRADE • REPAIR

New • Used • Refurbished

- Powerbooks
- PowerMacs
- Performas
- Quadras
- Mac II's/LC's
- Monitors
- Printers
- Peripherals
- Ram
- Parts

Free Diagnostic
Call now for best prices!

888-275-POWER
TOLL FREE 7 6 9 3

CIRCLE 242 ON READER SERVICE CARD

MacBase

computers

University, Schools, Gov't, & Fortune 1000 P.O.s Accepted

FedEx <http://www.MacBase.com>

(800) 757-1322

International (714) 428-0777

Hours: 8-6 M thru F, 10-2 Sat PST

FAX (714) 428-0778

Power Macintosh

4400/200	16/1.2GB/8xCD/KB	\$1589
7200/120	16/1.2GB/8xCD/L2	\$1149
7300/180	16/2GB/12xCD/KB	\$2089
7300/200	32/2GB/12xCD/KB	\$2489
8500/150	16/1.2GB/8xCD	\$1959
8600/200	32/2GB/12xCD/KB/Zp	\$2959
9500/150	32/2GB/CD/VI	\$2189
9500/200	32/2GB/8xCD	\$2989
9600/200	32/4GB/12xCD/KB	\$3389
9600/200MP	32/4GB/12xCD/KB	\$4299

PowerBook

1400cs/117	12/750	Limited \$1789
1400cs/117	16/750/6XCD	\$2099
1400c/133	16/1GB/6XCD	\$2999

Performa

PB3400c/180	16/1.1GB	\$3999
PB3400c/180	16/1.1GB/CD	\$4349
PB3400c/200	16/2GB/CD	\$4949
PB3400c/240	16/3GB/CD	\$5999

Performa

6200CD	8/1.2GB/CD/Ref	\$799
6220	16/1GB/CD VI/TV	\$848
6218CD	16/1GB/CD/15"	\$1199
5260CD	16/800/CD	\$1249
6300	16/1.2GB/CD/15"	\$1398
6360CD	16/1.2GB/8xCD	\$1179
6400/180	16/1.6GB/CD	\$1199
6400/200	16/2.4GB/CD	\$1629
6400/200	VIDEO EDITING	\$2099

Apple Color Printer \$369

Memory

Call Us For Current Pricing

8MB / 16MB DIMM	\$59/\$89
32MB / 64MB DIMM	\$199/\$339

All memory modules are new of lifetime warranty.

UMAX

Computer Corporation

S900L/225	32/2.1GB/CD	\$3599
S900L/233	32/2.1GB/CD	\$3969
S900L/250	32/2.1GB/CD	\$4669
J700/180	32/2.1GB/CD	\$2349
C600/200	16/1.2GB/CD	\$1699
C600/240	16/1.2GB/CD	\$1999
C500/180	16/1.2GB/CD	\$1299

MOTOROLA StarMax PowerPC

Computer Group

3000MT/240	32/2.5GB/8xCD	\$2199
3000DT/180	16/1.2GB/8xCD	\$1299
4000MT/200	32/2.5GB/8xCD	\$2299
4000DT/200	16/1.2GB/8xCD	\$2139

CIRCLE 243 ON READER SERVICE CARD

CALL THE MAC EXPERTS!

Providing complete, discounted Macintosh solutions for graphics, pre-press, and video professionals

Call for the absolute lowest prices and immediate delivery on the following products:

Displays: Apple, CTX, Hitachi, InFocus, LaCie, Mag, Magnavox, Mitsubishi, NEC, PowerMax, Radius, Samsung, Sony, ViewSonic

Software: Adobe, Acius, Claris, Denaba, MacroMedia, Microsoft, Netscape and dozens more!

Scanners: Agfa, Epson, Hewlett Packard, LaCie, Linotype, Microtek, Nikon, Polaroid, Umax, Visioneer

Printers: Apple, Canon, DataProducts, Epson, Fargo, GDC, Hewlett Packard, Kodak, Lexmark, NewGen, OMS, Tektronix, Xante

Storage: Alto, Iomega, Kodak, LaCie, Micronet, NEC, Olympus, Optima, PowerMax, Quantum, Seagate, StreamLogic, Sony, Syquest

Modems: Boca, Dayna, Global Village, Hayes, Motorola, US Robotics

Video: ATI, Focus, IMS, Media 100, Miro, Number 9, Radius, TrueVision

Overnight Delivery!

Low End

Mid-Range

High End

PowerMac 7200/120
w/24 MB ram, 1.2 GB hard drive, 8X CD-Rom, 15" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$1849

PowerMac 7300/180
w/32 MB ram, 2 GB hard drive, 12X CD-Rom, 17" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$3049

PowerMac 8600/200
w/64 MB ram, 2 GB hard drive, 12X CD-Rom, Internal Zip drive, 20" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$4799

PowerComputing

PowerBase 180 w/24 MB
ram, 1.2 GB hard drive, 8X CD-Rom, 15" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$1795

PowerCenter 604/180
w/32 MB ram, 2 GB hard drive, 8X CD-Rom, 17" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$2949

PowerTower Pro 225
w/64 MB ram, 2 GB hard drive, 8X CD-Rom, Internal Zip drive, 20" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$5099

SUPERMAC

SuperMac C500 180
w/24 MB ram, 1.2 GB hard drive, 8X CD-Rom, 15" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$1749

SuperMac J700L 180
w/32 MB ram, 2 GB hard drive, 8X CD-Rom, 17" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$3099

SuperMac S900/233
w/64 MB ram, 2 GB 7200 rpm hard drive, 8X CD-Rom, Internal Zip drive, 20" Trinitron Monitor, Ext. Keyboard, 8 Mb Video, Canvas 3.5 Software
\$5899

MOTOROLA

StarMax 3000/180
w/24 MB ram, 1.2 GB hard drive, 8X CD-Rom, 15" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$1749

StarMax 3000/240 w/32
MB ram, 2.5 GB hard drive, 8X CD-Rom, 17" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$2849

StarMax 4000/200 w/64
MB ram, 2.5 GB hard drive, 8X CD-Rom, Internal Zip drive, 20" Trinitron Monitor, Extended Keyboard, Canvas 3.5 Software
\$4289

PowerMax External Hard Drives



External 540 Mb Drive\$239
External 1.2 Gb Drive\$349
External 2.0 Gb Drive\$419
External 4.0 Gb Drive\$849
External Jaz One Gig Remov...\$469

Now in stock! PowerPC Apple Macs for under \$700!

POWER MAX

800-613-2063

Local line: (503) 624-1827 • Fax (503) 624-1635

HTTP://WWW.powermax.com • E-Mail: powermax@Europa.com

Prices subject to change without notice. Prices reflect cash discount.

CIRCLE 249 ON READER SERVICE CARD

PowerMax Trinitron® Monitors



"A PowerMax Power Play" - MacUser

PM15T .25 dot pitch\$419
PM17T .25 dot pitch\$719
PM17T 'Plus' .25 dot pitch.....\$899
PM20T .30 dot pitch\$1599
PM21 .28 dot pitch\$1647
PM20T 'Plus' .25 dot pitch\$1799

We also accept:
P.O.'s • COD's, &
we're leasing experts!



SAVE on RECONDITIONED MACS & PERIPHERALS

- We're Mac specialists.
- High-quality, reliable reconditioned equipment.
- Exclusive 6-month warranty.
- Compare and save.
- Buy with confidence.

1-800-281-3661

Faxback: 615-860-0109 (24-hrs)

E-mail: DataTech@aol.com

Visit our Web Site:

http://www.datatech-rmkt.com

DataTech Remarketing, Inc.
471 Myatt Dr., Madison, TN 37115
615-860-4422 • Fax 615-860-0390

CIRCLE 251 ON READER SERVICE CARD

Apple II & Macintosh

COMPUTERS • PARTS
EXCHANGE REPAIRS

Specialists in used & reconditioned systems, monitors, printers & parts.
Call for a free catalog.

WE BUY MACS!

Offices: 617-778-4600 Fax: 617-778-4848

1-800-274-5343

Pre-Owned Electronics

125 MIDDLESEX TPKE, BEDFORD, MA 01730

CIRCLE 252 ON READER SERVICE CARD

MacMail

**CALL NOW
INT'L ORDERS**

800-MAC-6844

www.macmail.com

**WITH THE
LOWEST
PRICE EVER!**

EPSON • SONY • UMAX • NEC



HEWLETT PACKARD • SYQUEST

www.MacMail.com
800-622-6844
Int'l: 305-639-9646
SE HABLE ESPANOL

P.MACS

7200/120+16 1.2G/CD\$1295
7600/132+16 1.2G/CD\$1745
8500/150+16 1.2G/CD\$2125
8500/180+32 2G/CD\$2620
9500/180MP+32 2G/CD\$3860
9500/200+32 2G/CD\$3095
CUSTOM CONFIGURATIONS !!

NEW P.MACS !

4400/200 16 1.2/8CD/Kb\$1645
7300/180 16 2 12CD /Kb\$2220
7300/200 32 2 12CD/Kb\$2598
8600/200 32 2 12CD.ZKb \$3095
9600/200 32 4 12CD/Kb\$3575

MONITORS

Apple Multiscan 15"\$379
Apple Multiscan 15"AV\$439
Apple Multiscan 1705\$625
Apple Vision 1710\$775
Apple AV 1710\$875
Apple Multiscan 20"\$1735
Sony 100SX 15" .25\$398
Sony 100SF 15"\$471
Sony 200SX 17"\$792
Sony 200SF 17"\$796
Superscan Elite 802 21"\$1898
Viewsonic TP 770\$749
Mits. Diamod Pro 21tx\$1769
VIDEO CARDS & ACCESSORIES
PRICES..... CALL !

PRINTERS

Apple SW 1500\$259
Apple SW 2500\$349
Apple LW 12/640\$1479
Apple color LW 12/660\$5899
HP 870CXI MC / PC\$485
HP Laser 6MP\$899
Epson Stylus color 800\$445

SCANNERS

Agfa Snapscan\$290
Umax Vista S12 Promac\$679
Microtek Scanmaker E6\$645
HP Scanjet 4C\$859
Agfa Arcus II\$1635

MEMORY

8MB Simm 72 Pin\$42
16MB Simm 72 Pin\$88
32MB Simm 72 Pin\$175
16MB Dimm\$88
32MB Dimm\$183
64MB Dimm\$349
PBOOK MEMORY CALL

PERIPHERALS

SupraExpress 33.6 F/Mdm\$119
G.V. Teleport 33.6 F/Mdm\$160
NEC CD-Rom 16x Ext.\$255
Calcomp ultra/slate 4X5\$135
Wacom 12X12 Artz II\$415

P.BOOKS

1400/117 CS 12/750\$2415
1400/117 CS 16/750 6CD\$2950
1400/133 c 16/1G/6CD\$3925
3400C 180 16/1.3/6CD\$4835
3400/200 16/2/6CD\$5298

STORAGE

Iomega Zip 100MB Ext.\$195
Iomega Jaz 1G Ext.\$430
Syquest 230MB Flyer\$280
Syjet 1.5GB EXT Kit\$475
Phillips 2X6 CD-Rec\$575
YAMAHA 4X6 CD-Rec\$975
Pinnacle Apex 4.6Gb mo\$1575

•Prices may change. •FEDEX•UPS•Etc...
accepted. •Int'l orders welcome
•Government P.O's

•Leasing plans
•Prices represent cash discounts!!
•All major credit cards

WITH THE LOWEST PRICE EVER!

e-mail sales@macmail.com

CIRCLE 250 ON READER SERVICE CARD

The Lowest Finance Rate Available FREE Software SuperBundle - \$3500 Value

Software SuperBundle - Adobe Premiere, Illustrator, PageMaker, Photoshop, Omni page Professional, DOS Mounter 95 Free with this Ultimate Graphics Workstation.

FULL-LINE AUTHORIZED SERVICE CENTER - MAC & PC
EQUIPMENT REPAIR, DATA RECOVERY, SHORT-TERM
RENTAL, LOANER PROGRAM AND POWERPC PROCESSOR
- 180/200/225/240 MHZ UPGRADE AVAILABLE.

SUPERBUNDLE!
\$399
PER MONTH



Power Macintosh 9600/200 Ultimate Graphics Workstation

- PowerPC 9600/200MHZ or PowerTower Pro 225MHZ
- Internal 12x CD-ROM
- 416 MB RAM
- 4.3GB internal AV hard drive
- Extended keyboard
- **\$1615** SONY 20" - 1280 x 1024 Color monitor
- Image No. 9 - 128bit Graphic Engine, 1600x1200, w/8MB
- **\$1649** Agfa Arcus II w/ Trans, 36-bit color

- External combo drive combo w/Jaz drive, Quantum 1.2, SQ200MB
- **\$1099** DataProduct Typhoon 11" x 17" 1200dpi 36MB RAM, printer w/one cartridge and Cables
- **\$3999** Active SCSI terminator
- One 25/50 SCSI cable, five 50/50 cables
- **\$149** UPS Battery Back-Up
- Image Solutions Extended Services

DSC Jaz
\$445

\$249!

Photoshop 3.0.5

\$249!

Live Picture

\$199!

Illustrator

Get DOS Mounter 95 for \$29 with any drive purchase!

\$29!

DOS Mounter 95

Ext. H/D, DAT Tape, MO, SyQ & CDR Devices (Minus \$39 for Internal Drive)

	Ext. Turbo	
42MB/160MB/230MB	\$99/\$159/\$179	+\$25
540MB/1.0GB	\$209/\$285	+\$35
IBM 2.0GB	\$369	+\$39
Quantum 2.1GB / 3.2GB	\$375/\$415	+\$29
Quantum 4.3GB Atlas	\$945	\$989
Seagate 1GB	\$309	\$339
Seagate 2.1GB	\$429	\$469
Seagate 4.3GB - Barracuda IV	\$1085	\$1149
Seagate 9.0GB Elite	\$1919	\$1979
SONY SOT-5000 8-15GB DAT Dr.	\$949	\$1079
DLT Tape Drive 30GB/40GB	\$2549/\$4999	+\$99
Exabyte 5GB Tape Dr.	\$1199	\$1249
SyQuest 270/200MB Ext. Drive	\$299/\$369	+\$25
SyQuest EZ135/EZ230	\$129/\$279	+\$25
Panasonic 650MB M.O. Dr.	\$699	\$749
SONY 1.3GB M.O. Drive	\$1049	\$1199
Pinnacle/Tahiti 2.6GB M.O.	\$1439/\$1599	+\$99
Olympus 230MB M.O. Drive	\$309	\$349
Fujitsu 230/640 MB M.O. Drive	\$409/\$619	+\$49
JVC CDR 6X/2X w/Toast	\$479	\$549
Yamaha CDR 4X/2X w/Toast	\$749	\$799
Yamaha CDR 4X/4X w/Toast	\$869	\$949
Yamaha CDR 6X/4X w/Toast	\$989	\$1049

Ext. Jaz/Zip & DiskArrays Ext. Turbo

10Mega Zip ext. Dr. w/Cartr.	\$127*	\$145*
Jaz ext. Dr. w/ Cartr.	\$447/\$467	+\$25
Jaz + CDR ext. Dr w/SW	\$979	\$1029
4GB DiskArray	\$999	\$1039
8GB F&W DiskArray	\$2289	\$2379
16GB F&W DiskArray	\$4749	\$4899
24GB F&W DiskArray	\$6949	\$6999
REMUS DiskArray	\$165	\$199
FWB JackHammer-PCI	\$335	\$369
ATTO Express PCI	\$335	\$369

Software Specials - MAC & Win.

Adobe Photoshop 4.0	\$329/\$389
Adobe Photoshop 3.0.5/LE	\$249/\$99
Adobe Illustrator 5.5/6.0	\$199/\$299
Adobe PageMaker V6.0/V6.5	\$199/\$329
Adobe Premiere 1.0/1.4.2	\$149/\$379
AdobeAfterEffect/Type-OnCall	\$499/\$399
Caere OmniPage Pro./Direct	\$99/\$39
DOS Mounter '95	\$49/\$29 with Drive
Danz Retrospect II 3.0	\$99
HSC Live Picture 2.1/2.5	\$249/\$399
Kai's Power Tools 2/3.0	\$39/\$99
Astarte CDR Toast Pro. 3	\$99
Microsoft Office 4.2.1 CD	\$249
Quark Express V 3.32	\$635
FWB H/D or CD-Disk Tool K.	\$29
RAM Doubler / FileMaker Pro	\$39/\$99
Fractal Design Painter v4.0	\$275
FD Poser v2/Dabbler V2	\$85/\$35
Clarix Works / Internet Con.	\$89/\$39

Scanner

Epson 1000C/636	\$539/\$769
Relisys Scorpio/Taurus	\$349/\$499
Relisys 2412/9624T	\$169/\$789
Microtek E3/E6	\$189/\$519
UMAX Vista S6/S12	\$275*/\$445*
Agfa StudioStar / Arcus II	\$795/\$1649
Nikon CoolScan / Super	\$1149/\$1849

JVC CD-ROM Recorder Int. w/ Toast Software



\$439!
4x Read
2x Write

UMAX \$900/225 Internet Publishing Station

- SuperMac \$900/225MHZ
- 224MB RAM
- 8MB VRAM Graphics Card
- Internal 12x CD-ROM
- 3.2GB internal hard drive
- Extended keyboard
- Sony 17 200SX multisync monitor
- Microtek ScanMaker E3, 300 x 600 dpi, scanner
- Iomega Jaz drive
- Apple Color StyleWriter 2500 (w/ toner cartridge and two AppleTalk connectors)
- ISDN digital modem
- Adobe PageMill
- Extended Services

\$0 Down!
\$189
PER MONTH
\$6.30 A DAY!

System Bundle w/ 20" monitor, XKeyboard, Mouse

	Buy!	Lease!
PowTowPro/225 32/2.2GB/CD	\$4779	\$106
PowTowPro/200 16/2.2GB/CD	\$3879	\$95
PM9600/200 32/4GB/12XCD	\$4599	\$105
PM9500/MP180 32/2GB/8XCD	\$4999	\$110
PM9500/200 32/2GB/8XCD	\$4199	\$93
PM8600/200 32/2GB/12XCD	\$4149	\$92
PM8500/180 32/2GB/8XCD	\$3599	\$79
PM8500/120 16/1GB/CD	\$2999	\$64
PM7300/180 16/2GB/12XCD	\$3399	\$74
PM7200/120 16/1.2GB/8XCD	\$2499	\$55
StarMax 3000/180 16/1.2GB/8XCD	\$2579	\$57
SuperMac \$900 /32/2.1GB/CD	\$4779	\$106
SuperMac J700 /16/2.1GB/CD	\$3779	\$84
DayStar MP400/ 2x200MHZ /32/2.2GB/CD (upgradable to 4x 200MHZ)	\$6999	\$154

MEMORY :Viking, KINGSTON, 128MB! NEWER TECH. AVAILABLE

	Optical	Viking Memory
		30 pin 72 pin 168 pin
DSC 128MB	\$7.99	
DSC 230MB	\$10.99	
DSC 650MB	\$28.99	
DSC 1.2GB	\$38.99	
Sony 1.3GB	\$59.99	
4MB	\$29	\$29
8MB	\$49	\$49
16MB	\$95	\$95
32MB	\$185	\$185
64MB		\$379

Printer

Apple STYW 2500 \$349
GCC XL 608, 11x17\$2289
GCC XL 1208, 11x17\$4139
Typhoon 8.36MB \$2999
Typhoon16.68MB \$3999

Modems

TelePort Platinum 33.6 \$165
Supra Fax/Mod. 33.3Kbps \$125
USR Sportster w/Voice \$189
3COM Impact ISDN \$329
Zoom FaxModem \$169

ORIGINAL SYQUEST CARTRIDGES

\$62! \$41!

SyQuest

270MB \$54
200MB \$62/\$54
EZ 135 \$19/\$22
88MB \$41/\$35
44MB \$38/\$32

\$89! Jaz

\$12*!

lomega

1.0GB Jaz \$89
100MB Zip \$12*

800-352-3420

Fax: 310-782-5974

Email: imagesol@earthlink.net
http://www.imagesolution.com

385 Van Ness Ave. #110 • Torrance, CA 90501

Order from 6 to 9 weekdays, weekends from 9 to 9. Visit our showroom 9 to 6 weekdays, weekends by appointment.

Prices subject to change without notice. Not responsible for typographical errors. 24 hour replacement limited to products in stock.

Image Solutions

The solution provider for print shops, service bureaus and imaging professionals

CLASSIFIED

MacGlobal
SYSTEMS AND PERIPHERALS SALES AND SERVICE

Performas	Powerbooks
410/466/476 Call	160/165/170/180 Call
550 5/10/CD \$799	150 4/240 \$550
580 5/500 \$850	520 4/240 \$750
631 8/500 \$950	520C 4/240 \$1,100
6200 8/gig \$1,100	540C 4/320 \$1,650

Power Macs	Quadas
7200 8/500 Call	630 4/250 Call
7500 16/500 Call	650/800/840/950 Call
8500 16/500 Call	

Printer	Monitors
StylW 1200 \$185	14" App Color \$235.00
Laser 300 \$285	15" App Mult \$275.00
Laser 320 \$450	17" 1705 \$885.00
Laser 4-600 Call	20" GS \$550

TOP DOLLAR paid for used memory, hard drives and CPUs!

Call us!
Phone: 1-800-722-8864
Fax: [408] 997-1400

MacGlobal

CIRCLE 254 ON READER SERVICE CARD

VL PROMAC
8001 NW 36th St. Ste. 105 Miami, FL 33166
1-800-829-4857 Fax: (305)593-8921
em@il: vlpromac@icanect.net

POWER MAC COMPUTERS	AGFAs	PRINTERS
PM 4400/200 16/1.2/12xcd/key \$1629	Duo Scan for Mac \$4339	LaserWriter 12/640 \$1529
PM 7300/180/16/2gb/12xcd/Key \$2289	Arcus II Flatbed \$1699	LaserWriter 16/600PS \$2095
PM 7300/200 32/2g/12xcd/Key \$2569	SnapScan 600*600 \$319	StyleWriter 1500 \$249
PM 8600/200 32/2g/12xcd/Key \$3539	StudioStar 1200*1200 \$849	HP LaserJet 5M \$1619
PM 9600/200 32/4g/12xcd/key \$3799	StudioScan IISI Full \$799	LaserJet 6mp \$999
PM 7200/120/16/1.2/8xcd \$1235	APPLE SCANNERS	Canon BJC 4550 \$529
PM 7600/132 16/1.2/8xcd \$549	Color One Scanner 600/20 \$549	KEYBOARDS
PM 8500/180/32/2.0/8xcd \$839	Color One Scanner 1200/30 \$839	Design Keyboard \$74
PM 9500/200/32/2g/8xcd \$659	MONITORS	Extended Keyboard \$145
PERFORMA COMPUTERS	15" AV Monitor \$429	Macally Extended Key \$49
Performa 6360/160/16/1.6/CD \$779	17" 1705 Monitor \$659	Macally Mouse \$24
Performa 6400/180/16/1.6/CD \$899	17" 1710 Monitor \$779	DRIVES
Performa 6400/200 16/2.4/8XCD \$1319	17" 1710 AV \$899	Zip Drive \$199
POWERBOOKS	20" Apple Monitor \$1619	Jaz Drive \$449
1400cs 12/750 \$2315	15" Viewsonic \$319	CD Recorder 2x6 \$589
1400cs 16/750/cd \$2799	17" Viewsonic Monitor \$549	1.2 gb SCSI Int \$269
1400c 16/1gb/cd \$3799	20" Viewsonic \$1149	2.1 gb SCSI Int \$315
3400c 16/1.3/cd \$4799	KEYBOARDS	2.1 gb SCSI EXT \$379
3400c 16/2gb/cd \$5249	Design Keyboard \$74	3.2 gb SCSI Int \$369
	Extended Keyboard \$145	3.2 gb SCSI \$419
	Macally Extended Key \$49	CARTRIDGES
	Macally Mouse \$24	Zip Cartridges \$15
		10 Pack \$145
		Jaz Cartridge \$94
		10 Pack \$878
		CD Blank \$6.00

We welcome international calls! (305-593-9221) We also sell Drives, AGFA, Packard Bell, IBM & clones, Compaq, Power Computing, Umax and more! (Too much to list.) We accept Credit Cards, Cashiers Check, Money Order. Prices may change without Notice! Qty Pricing Available!!

CIRCLE 257 ON READER SERVICE CARD

(800) 673-6227

\$799*	\$999*	\$1099*
P631	P6116	P6205tv
68040LC33	601-60Mhz	603-75Mhz
8MB RAM	8MB RAM	8MB RAM
500MB HD	700MB HD	1.2GB/4xCD
CD Rom	CD Rom	Remote/TV/VI
Includes:	Includes:	Includes:
17" Trin. Mtr	17" Trin. Mtr	17" Trin. Mtr

www.poweron-line.com
"price includes 3% cash discount"

17" Std.-Res. Trinitron (R) 285
17" Hi-Res. Trinitron (R) 325

PowerComputing, Motorola, UMAX
StyleWriter 1200 B/W Ink-Jet (R) 119
Apple 1.44 FDHD Pull/New 79/99
Int./Ext. 4x CD-ROM (N) 85/119
Int. 40/160 MB HDs(N) 25/65
Radius Mouse, ADB (N) 16.50
Extended Keyboard (N) 35

POWER ON
COMPUTER SERVICES
(916) 652-1880 • (916) 652-1881 FAX

CIRCLE 255 ON READER SERVICE CARD

COMPUTER REVELATIONS

1 800 275-9924
in NY 516 737-0800

331E DANTE COURT HOLBROOK NY 11741 FAX 516 737-0923

NEW & USED BOUGHT & SOLD
Ask about our EXTENDED WARRANTY
ALL APPLE PARTS & ACCESSORIES IN STOCK
Rentals / Service available in NYC area

POWERMAC	
7300/180 \$2299	
7300/200 \$2699	
8600/200 CALL	
9600/200 CALL	
7200/7600/8500/9500/ CALL	
PRINTERS	
LWRITER 12/640 CALL	
LWRITER 4/600 \$889	
HP 6MP CALL	
HP 1600 C/PS CALL	
HP 4MV \$2699	
STYLEWRITER 1500 CALL	
STYLEWRITER 2500 \$349	
DESKWRITERS CALL	
POWERBOOK	
1400CS/12/750 \$2479	
1400CS/16/750CD \$2899	
1400C/117 CALL	
1400C/133 CALL	
UMAX / SUPERMAC	
S90L CALL	
S900D CALL	
SCANNERS	
MICROTEK SCANNERS CALL	
VISTA/S6E S6H0 \$279	
POWERLOOK II \$1829	
HP SCANJET 4C \$939	
EXPRESSION 636 \$1389	
AFGA SNAPSCAN \$329	
AFGA ARCUS II \$1589	
MONITORS	
APPLE 1710AV \$899	
APPLE 1705 \$995	
CPD200SF2 \$799	
PRECISION 17"SR CALL	
PRECISION 21"SR \$3299	
THUNDER COL CALL	
CPD 15SF CALL	
NEC	
NEC 17XV \$779	
NEC 17XP \$995	
NEC 21XE \$1899	
NEC 21XP \$2199	
ALL MAJOR SOFTWARE	

Call About... MOTOROLA STARMAX 3000 & 4000
Performas 6360 \$1499
6400/180 CALL
6400/200 CALL

APPLE SUPERDRIVE
Internal with xchange \$149
CALL ABOUT MEDIA100

CIRCLE 258 ON READER SERVICE CARD

MacMarket
www.macmarket.com
Save with MacMarket

Check Our Great Prices in
Mail Order Section
800-223-4622
Fax 818-708-6399

Software Specials
Limited Time Offer
Full Version Software

Photoshop 4.0.. \$1035 **\$389**
Freehand 7.. \$1139 **\$299**
MS Office 4.21 \$1306 **\$349**
After Effects 3.1 \$1055 **\$399**
Painter 4.0.. \$1200 **\$200***

*after \$100 mail in rebate from manuf.until 3/31/97
Prices and availability subject to change without notice

CIRCLE 259 ON READER SERVICE CARD

USED COMPUTERS

The Computer Exchange
"We match buyers and sellers of used equipment nationwide."

From CLASSIC to POWER PC
Call for More Info
800-304-4639
Ph: 404-898-0700
http://www.compech.com
205 Armour Drive Atlanta, GA 30324

"Friends don't let friends use 'DOS'!"

The United Computer Exchange
... Buy or Sell Any Macintosh Through Us!

800.755.3033
770.612.1205
Visit Our Online Exchange at www.uce.com

CIRCLE 256 ON READER SERVICE CARD

MAJOR PUBLISHING HOUSE LIQUIDATION

OVER 5000 APPLE ITEMS!

APPLE® 14" 17" & 20" MULTI-SCAN MONITORS
POWER MAC 6100, 7100, 7500, 7600, 8100
CENTRIS 610, 650 • QUADRA 800, 950 • QUICK-CAM
HP LJ4, 4MV • APPLE® COLOR LASERWRITERS

One of the largest publishing house in the US is liquidating a large portion of their computer inventory and we must liquidate millions of dollars worth surplus APPLE® Macintosh computer equipment and accessories. We must sell at the lowest prices in the US to move this inventory. We will not be undersold!

THE Computer Exchange STORE
1.800.416.6338
2018 LINDELL AVENUE • NASHVILLE, TN 37203
WWW.COMPUTEREXCHANGE.NET

BAR CODE PRO™

Create EPS graphics for your desktop publishing application. Call for free demo disk and information you'll need to make an intelligent purchase for Mac or Windows.

SYNEX

800.619.0299
718.499.6293
Or fax
718.768.3997

CIRCLE 260 ON READER SERVICE CARD

Multiple Monitors With Multiple Benefits



Phone: 516-273-0404 / Fax: 516-273-1638
E-mail: info@commspecial.com
Internet: http://www.comspecial.com

Connects multiple monitors to a single Mac® computer. Only Communications Specialties' distribution amplifiers offer these features:

- 2 to 10 outputs, using DB-15 (Mac) connectors
- Supports distances up to 250 ft.
- 300 MHz bandwidth supporting resolutions up to 1600 x 1280
- 3-year warranty/30-day guarantee
- Extension cables available
- Designed and manufactured in the USA
- Compact size
- Quality construction
- Starting at \$295

**Communications
Specialties, Inc.**
...For high-performance computer video interfaces.

MARKETPLACE SHOPPERS HAVE THE CONFIDENCE AND COMPUTER SAVVY TO PURCHASE DIRECT FROM YOUR AD. SEVEN OUT OF TEN BOUGHT FROM MARKETPLACE ADS IN THE LAST 12 MONTHS.

- 65% BOUGHT HARDWARE.
- 55% BOUGHT SOFTWARE.
- 49% BOUGHT SUPPLIES OR SERVICES.

ADVERTISE HERE,
WHERE MAC BUSINESS
BUYERS BUY DIRECT! CALL
800-825-4237 TODAY!

BAR CODE/LABELING SOFTWARE • BARCODES AS GRAPHICS • BAR CODE FONTS • PORTABLE BAR CODE READERS • LIFETIME SUPPORT

300,000 Business People Worldwide Use Our Bar Coding Products!



Call to find out how.
Order to find out why.

3

Exciting New
Products Available

- PrintBar III
- PrintBar Wizard
- CodeScan Lite

Call For More Information
And Your FREE Catalog.

800
232-7625
www.bearrock.com

UPC-A/UPC-E • UCC/EAN-128 COUPON CODES • I 2of5 • CODE 39 • CODE 128 • POSTNET • CODABAR/NW-7 • AND MANY MORE

CIRCLE 261 ON READER SERVICE CARD

MAC REPAIR & UPGRADE

800-622-7977

24 HOUR SERVICE TURNAROUND
LONGER WARRANTY
FREE DIAGNOSTICS
COMPETITIVE PRICE

- Specialize in component repairs
 - Power Mac
 - Power Book
 - Logic boards
- Advance Exchanges



Phone: 408-720-9899
Fax: 408-720-9459
720 East Evelyn Ave.
Sunnyvale, CA 94086
http://www.dttservice.com

DT & T MACINTOSH SERVICES, INC.

CIRCLE 262 ON READER SERVICE CARD

STOP!

FONT FRUSTRATION!

FontXpress™ 3.21

FontXpress will collect all of your QuarkXpress™ document fonts for output to a service bureau. Collects all document screen fonts, PostScript fonts, and all EPS fonts!... **\$69.99/copy**

FontDoctor™ 1.05

FontDoctor will examine your fonts folder to find and fix common font problems, including corrupt fonts, missing fonts, duplicate fonts, ID conflicts, and more!... **\$69.99/copy**

BUNDLED..... **\$109.99**



MORRISON
softDesign

(704) 597-3789

http://members.aol.com/morrDesign

CIRCLE 263 ON READER SERVICE CARD



INTELLIBOTS™

..An Adventure in Programming

Learn how computers are built and programmed.
Program "Intelligent Robots" to find goals or other "Ibots".
Watch your Ibot perform on screen!
Compete with you friends! Have fun!

Available now for Macintosh and Windows.
For more information and a FREE demonstration copy,
visit our web site:

<http://www.intellit.com>

INTELLIGENT TECHNOLOGIES, INC. P.O. BOX 2022 - OAKM., VT 05459-2022
VOICE MAIL OR FAX: 801-431-0829

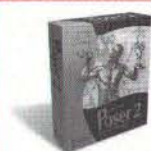


CIRCLE 264 ON READER SERVICE CARD

JUNE 1997 / MacUser 143

Student - Teacher & School Discounts!

WE WILL BEAT ANY ADVERTISED PRICE!!



\$95

POSER 2

Human Modeling & Rendering



\$125

Boris Effects 2.1

High Quality Plug-in containing several textures for Adobe Premiere.



\$249

Coda Finale 3.7

Music Notation Software



\$1349

ElectricImage Broadcast 2.75

Hi-Speed Rendering



\$79

Eye Candy 3.0

Photoshop Plug-in that contains several creative filters.



\$179

Canvas 5

Illustration & Photo Editing



\$89

ClarisWorks 4.0.5

Integrated Package



\$69

Word Perfect 3.5.1

All Around Powerful Word Processor



\$129

FileMaker Pro 3.0

Relational Database



\$319

MiniCad 6.0.1

2D/3D Drafting & Modeling

101 Dalmatians Animated Story...	\$39	DeltaGraph 4.0.....	\$89
18 Perfect People.....	\$249	Design Workshop 1.5.....	\$229
3D VRML Visions.....	\$39	Director Multimedia Studio 2.0...	\$899
3D Web Workshop.....	\$95	DrawingSlate II 12x12.....	\$299
4D Server 1.5.....	\$729	DrawingSlate II 12x18.....	\$499
4th Dimension 3.5.....	\$449	Elastic Reality 1.2.....	\$149
A.D.A.M. Essentials.....	\$99	ElectricImage Student 2.5.....	\$249
After Dark 4.0.....	\$39	Empower Pro.....	\$110
Agfa Arcus II.....	\$1849	Encore 4.1.1.....	\$249
Agfa SnapScan.....	\$339	EndNote Plus 2.1 w/EndLink.....	\$165
Alias Sketch! 2.0.2.....	\$199	Envelopes Starter Pack III.....	\$65
Amapi 3.0.....	\$249	Expressionist.....	\$89
ArchiCad 5.0 Student.....	\$129	FastTrack Schedule 4.01.....	\$129
Astound 2.0.....	\$99	Fetch 1.5.....	\$85
Aurorix 2.....	\$149	FileGuard 3.0.....	\$119
Authorware 3.5.1.....	\$649	FileMaker Pro 3.0 Server.....	\$675
Authorware Interactive Studio.....	\$1979	Final Draft 4.1.....	\$125
AutoCAD R12.....	\$19	Flash 1.0.....	\$199
BBEEdit 4.0.2.....	\$79	FolderBolt Pro 1.0.3.....	\$75
Berserk 1.0.....	\$149	Fontographer 4.1.3.....	\$149
Boris Effects Media 1000.....	\$475	Form Z 2.8.2 W/RenderZone.....	CALL
Bravado 1000 w/Premiere.....	\$699	Form Z 2.8.2.....	CALL
CD-ROM Toolkit 2.0.3.....	\$49	Fractal Detailer 1.0.....	\$199
ChemDraw Pro 3.5 Student.....	\$149	Fractal Expression 1.0.....	\$199
ChemOffice Pro 3.5 Student.....	\$299	FreeHand 7.0.....	\$169
Chinese Language Kit 1.1.1.....	\$129	Galaxy Plus Editors 2.1.....	CALL
Claris Draw 1.0.....	\$119	German Power Translator 1.0.....	\$99
Claris Emailer 2.0.....	\$45	Grolier 1997 Mpc Encyclopedia.....	\$59
Claris Organizer 2.0.....	\$59	Hard Disk Toolkit 2.01.....	\$109
Class Action.....	\$65	Hayes Accura 336 Fax/Modem.....	\$155
Cliff Notes Calculus 4.0.....	\$35	Helix Express 3.5.....	\$249
ClipArt Art Bytes.....	\$55	HexWrench 1.0.....	\$249
CodeManager 3.0.....	\$129	HomePage 2.0.....	\$69
Collage 2.0.1.....	\$69	HyperCard 2.3.5.....	\$89
Color III! 3.2.....	\$39	HyperStudio 3.0.....	\$119
Color QuickCam.....	\$239	IdeaFisher Pro 6.0.....	\$75
ColorDrive 1.5.3.....	\$89	Infini-D Production Studio.....	\$379
ColorWeb 1.0.....	\$29	Infinite Fx.....	\$65
Conflict Catcher 4.0.....	\$59	Inspiration 4.1c.....	\$89
CorelDRAW Suite 6.....	\$169	IntelliHance 2.0.1.....	\$85
Cricket Graph III 1.5.3.....	\$79	Internet Connection Kit 1.2.....	\$45
Cubase Audio XT/VST.....	\$299	Jag II.....	\$55
Cubase Score VST.....	\$229	Japanese Language Kit 1.2.....	\$129
Custom Web-Ready Art.....	\$69	Jmp 3.1.5.....	\$329
CyberPress 1.0.....	\$129	Judson-Rosebush Wldside Bndle.....	\$99
CyberSound FX.....	\$85	KPT Final Effects 3.0.....	\$349
Cyclonist.....	\$249	KPT Final Effects AP 1.0.....	\$105
DC20 Digital Camera.....	\$289	KPT Power Photos Vol 1,2,3 or 4.....	\$85
Dabbler 2.0.....	\$39	KPT Vector Effects 1.0.....	\$85
Datadesk 5.0.....	\$369	Kai's Power Goo 1.0.....	\$49
DeBabelizer Toolbox 1.6.5.....	\$219	Kai's Power Tools 3.0.2.....	\$85

Visit our New Web Site!!

<http://www.swsonline.com>

**SAME DAY SHIPPING ON MOST ITEMS.
 **ADOBE, SYMANTEC & MICROSOFT PRODUCTS AVAILABLE TO QUALIFIED STUDENTS, TEACHERS & SCHOOLS.
 **SCHOOL PURCHASE ORDERS WELCOME.
 **NO SURCHARGE ON CREDIT CARDS.
 **IBM & MAC PRODUCTS AVAILABLE.
 **Prices and availability subject to change
 **Free AOL Starter Kit while supplies last



The
SOFTWARE
Source

1-800-831-2940

1750 Brielle Ave, Unit A-2

Ocean, NJ 07712

PHONE (908) 695-2100

FAX (908) 695-9371

E-MAIL: SFTSWS@AOL.COM

Student - Teacher & School Discounts!

LATEST VERSIONS & FULL PACKAGES

KaleidaGraph 3.0.....	\$89	QX-Tools 2.0.....	\$85
Kidpix Studio.....	\$35	Quick Seat.....	\$25
Killer Transitions.....	\$189	QuickSite.....	\$89
Korean Language Kit 1.0.....	\$129	QuickKeys 3.5.....	\$85
LabVIEW Student.....	\$79	Raid ToolKit Array 2.0.....	\$169
LightningDraw Gx 1.0.3.....	\$99	Ram Doubler 2.0.....	\$55
Live Picture 2.5.1.....	\$199	Ray Dream Studio 4.1.....	\$199
Live Picture XT 1.0.....	\$75	Remote Access Personal Server 2.1.....	\$155
Logomotion 2.0.....	\$69	SPSS 6.1 Student.....	\$99
M.Y.O.B 7.0.....	\$49	Sculpt 3D 4.1.....	\$219
M.Y.O.B 7.0 w/Payroll.....	\$90	SigmaPlot 5.0.....	\$199
MAX 3.5.....	CALL	Simcity 2000.....	\$35
MTropolis 1.1.1.....	\$495	SoftPolish 1.2.....	\$69
Mac Academy Tutorial Videos.....	\$35	SoftWindows 3.0.....	\$229
MacDraft 4.2.1.....	\$199	SoundEdit 16+ Deck II.....	\$249
MacLink+ Translator Pro 9.0.....	\$95	Speed Doubler 2.0.....	\$55
Maple V 4.0.....	\$599	Spell Catcher 1.5.....	\$49
MathType 3.1.....	\$99	Spring Cleaning 1.0.....	\$49
Mathcad 6.0+.....	\$149	Stencil II! 1.0.....	\$89
Mathematica 3.0 Student.....	\$149	Studio Effects 1.0.....	\$349
Mathematica Professional 3.0.....	\$779	Studio VisionPro 3.5.....	CALL
Matlab 4.0 Student.....	\$99	Stuffit Deluxe 4.0.....	\$69
Mavis Beacon Teaches Typing 2.0.....	\$35	Stylist 1.0.....	\$85
MediaPaint 1.2.....	\$199	SuperCard 3.0.....	\$129
MediaTool Kit 2.1.....	\$399	SuperCard Multimedia Studio III.....	\$229
MeshPaint 3D 1.6.....	\$315	SupraExpress 336 Modem.....	\$139
Metaphotos.....	\$149	System 7.6 Software.....	\$85
Micro Grade.....	\$69	TelePort Platinum 336.....	\$169
Minitab Release 10Xtra.....	\$249	TextBridge Pro 96.....	\$159
Mosaic 1.43.....	\$249	Texturescape 2.0.....	\$69
Mouseman Cordless.....	\$69	The Teacher's Tool Kit.....	\$69
MovieFlo 2.0.2.....	\$349	Topdown Flowcharter 4.5.....	\$155
Myrmidon 1.1.....	\$35	TransFX.....	\$39
NetObjects Fusion 1.0.....	\$249	Tree Professional 4.0.....	\$325
Nisus Language Dictionaries.....	\$55	Turbo Mouse 5.0.....	\$109
Nisus Writer 5.0.....	\$99	Turbo Toolkit 1.0.....	\$49
Now Bundle 3.6.....	\$69	Umax SuperMac S900L/180DP.....	\$4299
Now Startup Manager 7.0.....	\$49	Umax Vista-S12 Scanner.....	\$729
Now Utilities 6.5.....	\$55	Umax Vista-S6E Scanner.....	\$299
OmniPage Pro 7.0 Upgrade.....	\$125	Us Robotics Sportster 56k.....	\$209
OmniPage Pro 7.0.....	\$329	VersaTerm Pro 5.0.....	\$179
Overdrive 1.0.....	\$75	Virex 5.7.....	\$49
Overture 2.0.1.....	CALL	VirusScan 2.0.....	\$45
PageTools 2.0.....	\$85	Vision 3.5.....	CALL
PaperPort Vx.....	\$289	Vision 3D 4.0.....	\$99
PhotoTools 1.0.....	\$85	Wacom Art Z II 12x12.....	\$399
Phototone Alphabets.....	\$129	Wacom Art Z II 6x8.....	\$285
PlugInfinite.....	\$19	Wacom ArtPad II 4x5.....	\$129
Power Fpu.....	\$75	Wacom ArtPad II 4x5 w/Dabblor 2.0.....	\$149
Presenter 3D 3.6.....	\$995	Walkthrough Pro 2.6.....	\$229
Printshop Deluxe 1.1.....	\$55	WebPainter 1.0.....	\$79

Artist's Dream Bundle \$469



Fractal Painter 4 & Wacom Art Z II 6x8



DIRECTOR 5.0.1

2D/3D Graphics And Digital Video

\$299



FREEHAND GRAPHICS STUDIO 7

Includes Freehand 7, Fontographer, Extreme 3d and Xres

\$199



KPT BRYCE 2

3d Rendering and Animation

\$119



CodeWarrior 11

C&C++ Pascal and Java Development Environment

\$129



SoftWindows 95

Run Windows 95 on your PowerMac

\$269



LIGHTWAVE 3D 5.0

3D Modeling, Rendering and Animation

CALL



INFINI-D 3.5

3D Animation and Design

\$229



StudioPro 2.0

3D Modeling and Rendering

\$549

Free America Online Starter Kit & 15 Free Hours with every order!



CALL FOR FREE CATALOG!!
(800) 831-2940

INCLUDES COMPLETE PRICE LIST & FREE PRODUCT INF..



1-800-831-2940

1750 Brielle Ave, Unit A-2
Ocean, NJ 07712
(908) 695-2100
FAX (908) 695-9371
E-MAIL: SFTSWS@AOL.COM

DATA RECOVERY: 800-440-1904

7 good reasons to choose DriveSavers:



©1997 DRIVESAVERS, INC.

1. We're the most trusted and respected data recovery specialists.
2. 24-hour, onsite, and weekend service available.
3. Proprietary techniques so advanced we retrieve data others might simply abandon.
4. Over 12 years of data recovery experience.
5. Certified to maintain most drive warranties.
6. Featured by CNN, NextStep, C-Net, Forbes.
7. All storage devices; DOS, Win95, WinNT, OS/2, Mac OS, UNIX, Sun, SGI, Novell.

Visit DriveSavers at: www.drivesavers.com

DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949, INTL: 415-382-2000, FAX: 415-883-0780

CIRCLE 266 ON READER SERVICE CARD

DATA RECOVERY IN HOURS.

- Over 10 years of experience with clients worldwide (e.g., Apple, NASA, & FedEx).
- We've recovered more than half-a-million megabytes of Mac data alone.
- You only pay if there's a recovery.
- One-Day turnaround is available.
- Call 24-hours a day.



LAZARUS

DATA RECOVERY

Working at the speed of business.

800-341-DATA

415-435-5556 • FAX 415-435-5553 • RESTRICTIONS MAY APPLY
381 Clementina Street • San Francisco, California 94103

CIRCLE 269 ON READER SERVICE CARD



OVER THREE-QUARTERS OF MACUSER SUBSCRIBERS LOOK AT THESE ADS!

ADVERTISE HERE, WHERE MAC BUSINESS BUYERS BUY DIRECT! CALL 800-825-4237 TODAY!

Source: 1996 MacUser Marketplace Subscriber Study

SO, YOUR HARD DRIVE SPLIT AND TOOK ALL THE DATA WITH IT?

PROFESSIONAL DATA RECOVERY SERVICES.

HARD DRIVES, FLOPPY DRIVES, SYQUEST, EZ-135, ZIP, JAZ, OPTICAL AND BERNOULLI.

ONE-DAY SERVICE AVAILABLE.

COMPETITIVE RATES.

TOTAL RECALL
THE DATA RECOVERY COMPANY

800-743-0594

2462 WAYNOKA ROAD COLO SPRINGS, CO 80915 • 719-380-1616 • 719-380-7022 • <http://www.recallusa.com>

CIRCLE 267 ON READER SERVICE CARD

THESE ADS WORK!
71% OF THOSE WHO READ MARKETPLACE ADS BUY OFF THE PAGE.

ADVERTISE HERE, WHERE MAC BUSINESS BUYERS BUY DIRECT! CALL 800-825-4237 TODAY!

Source: 1996 MacUser Marketplace Subscriber Study

!GNINRAW

Enter at your own risk.

WWW.ITS LIVE.COM

The HOTTEST live sex on the net.

Adults Only

DUE TO THE FORCES AND EXCITEMENT CREATED BY THESE

GET DIRTY ONLINE!

The Ultimate Adult Amusement Park

24 hour live dancers
Free to Members

365 days of video library access • 1000's of ever-changing photos • Back issues of the magazine, chat

GIRLS, GIRLS, GIRLS

1-on-1 video fun, phone interactions and much much more!! Why buy cable? Get DIRTY Online!

www.dirtyonline.com/mac

Video Software for Mac/PC/Unix - 18 years & older

BACK CONDITIONS, INHIBITIONS AND GOVT CONTROL

CIRCLE 268 ON READER SERVICE CARD

Swankyville USA

Sweaty Muscle Lust
Tattoos & Peircing
Lesbian Wrestling
Foot Heaven
Skirt Tease
Catfighting
Pantyhose
Messy Girl
Spanking
Amateur
Flashing
& more

ADULTS 18+ ONLY

64pg. color catalog
Item: CAT \$5
video sampler & catalog
Item: V-SAM \$25
Send order & age statement to:
C.R.L.
PO Box 460MU
Carmel, NY 10512
Phone 800-320-7379*
Fax 800-215-8731
*\$9.95 Phone Order Processing fee
VISA/MasterCard accepted

<http://www.swankyville.com>

ADULTS OVER 18 YEARS

Beautiful Girls AT YOUR COMMAND
Interactive Live Video Sex

NO SOFTWARE NEEDED
LARGEST SCREEN ON THE INTERNET

CHAT • DOWNLOAD FILMS
HOT PHOTOS • STORIES • LIVE INTERACTIVE • STRIP SHOWS
LEG SHOW • B & D • FETISH

WWW.PLATINUMPRIVATE.COM
1-800-4-PLAY-13
Platinum PRIVATE

CIRCLE 271 ON READER SERVICE CARD

BUSINESSCARD

MacUser
MARKETPLACE

MacUser's BusinessCard section is a forum for innovative, hard-to-find and low-cost MAC products and services. Ads are listed by product category and include Reader Service numbers to allow fast, easy response.

RATES:

1 issue—\$605, 6 issues—\$570, 12 issues—\$550.

Multiple-ad per issue rates also available.

Prepayment must accompany each insertion.

AMEX/VISA/MC welcomed.

AD FORMAT:

MacUser will typeset each BusinessCard ad. Advertisers should furnish typewritten copy. Ads include: 1) Headline (1 line, initial caps=30 characters max, all caps=25 characters max), 2) Descriptive copy (5 lines, 225 characters max), 3) Company name (same specifications as headline), and 4) Address and telephone number (2 lines, 40 characters per line). No logos, artwork or camera-ready ads. Publisher reserves the right to edit supplied copy to meet section specifications.

DEADLINES:

MacUser is published 12 times a year.

The BusinessCard closing is approximately two months prior to issue date.

Please send copy and payment to:

MacUser BusinessCard

One Park Avenue, 3rd Floor

New York, NY 10016

ATTN: Alexandra D'Anna

For more information,

call Alexandra D'Anna

at 800-825-4237 or 212-503-5965,

FAX: 212-503-5860.

HARDWARE/PERIPHERALS

HEWLETT-PACKARD DEMO PRINTERS

All Macintosh/Apple Compatible
Laser Printers, DeskWriter Inkjet Printers,
PaintWriter Color Printers
Pen Plotters, DesignJet Inkjet Plotters
<http://www.dasher.com/specials/macindex.html>

TED DASHER & ASSOCIATES

E-mail sales@dasher.com
(800) 638-4833 Fax (205) 591-1108

CIRCLE 364 ON READER SERVICE CARD

SOFTWARE/BUSINESS

AutoMenus Pro

Menu enhancement Control Panel that makes menu navigation (especially those pesky hierarchical menus) much easier. What makes AutoMenus Pro so useful is that the menus stay down without the need to hold the mouse down.

Night Light Software

305 Orange Ave, Mtn View, CA 94043
<http://www.nlssoftware.com>

CIRCLE 365 ON READER SERVICE CARD

BusinessCard - Cost-Effective Sales!

BusinessCard is the most cost-effective way to shake hands with the business buyers who will boost your sales.

BusinessCard

Call your representative today!
800-825-4237.

MacUser Means Business

MacUser BusinessCard is your most cost-effective, direct way to reach Macintosh Business Buyers.

BusinessCard

Call your representative today!
800-825-4237

GENEALOGY SOFTWARE

REUNION the family tree software

Rated the BEST by MacUser (1.96), MacWorld (6/95) & MHJ (4/95). Easily create large charts w/photo's-they're perfect for family reunions! To order call MacWarehouse(800)255-6227. Free demo on CDS, AOL(keyword:roots) & Web site:www.leisterpro.com.

LEISTER PRODUCTIONS

P.O. Box 289, Mechanicsburg, PA 17055
tel: (717)697-1378 • e-mail: info@leisterpro.com

RELIGION

BIBLE ON DISK or CD-ROM

Full Featured. Fast & Friendly Bible study software. As the leader in Bible study software since 1981 we have continued to listen to our customers & provide them with the tools they need. Call for a FREE catalog. <http://www.brs-inc.com/bible>

BIBLE RESEARCH SYSTEMS

2013 Wells Branch Pkwy #304, Austin, TX 78728
(800) 423-1228 (512) 251-7541

SERVICES/COMPUTER INSURANCE

Insures Your Macs

The COMPUTEROWNERS™ insurance policy repairs or replaces hardware, media and purchased software. Rates as low as \$49 a year covers theft, accidents, fire, power surge and more! Call for immediate coverage or info: 1-800-800-1492.

Safeware, The Insurance Agency Inc.

2929 N. High St., PO Box 02211, Columbus, Ohio 43202
1-800-SAFEWARE

CIRCLE 372 ON READER SERVICE CARD

DISK DUPLICATION

Edgewater Diskette, Inc. (EDI)

Diskette Duplication - no job too large or too small. Custom Packaging & Mailing programs. National Coverage. Competitive pricing. Call for Quotation or Information.

Edgewater Diskette Inc.

800-767-6851 318-965-9613

CIRCLE 373 ON READER SERVICE CARD

CD ROM

CD-ROM PRODUCTION SERVICES!

- All formats: Mac, ISO, Hybrid, Mixed Mode
- Premastering, beta testing, or archiving
- Mass Replication available, any quantity
- Personal, Knowledgeable Service for 10 Years!
- Certified Apple Developer •low prices/fast delivery

Northeastern Digital Recording

2 Hidden Meadow Ln Southboro MA 01772
508-481-9322 fx:508-624-6437 CDNDR@aol.com

CIRCLE 376 ON READER SERVICE CARD

Strat-O-Matic Computer Baseball

Based on our famous board game. No game is more accurate. Game comprised of General Manager, auto-play, statistical, swap-o-matic, draft-o-matic and radio style play-by-play packages. Also, all 28 1996 teams and stadiums. On Disk & CD Rom.

STRAT-O-MATIC

46 Railroad Plaza Glen Head, NY 11545
800-645-3455 <http://www.strat-o-matic.com>

CIRCLE 377 ON READER SERVICE CARD

TRAINING

Rent MacAcademy Videos by Mail

Video's the easy way to learn! All major Mac programs available: over 85 different titles, each 2 hours long. A two week rental including S&H, costs less than a dollar a day. Return postage is prepaid. Get a free catalog. Ask about our CD-ROM rentals.

CareerTAPES® Enterprises

PO Box 309 Center Harbor, NH 03226
(603) 253-7470

CIRCLE 378 ON READER SERVICE CARD

VIDEO TRAINING FOR MACS

Clearly explained, easy-to-follow lessons. Covers Mac OS, ClarisWorks word processor and spreadsheet, file management, much more! 400 minutes training on 4 tapes only \$89.95. 30-day money back guarantee. Visa/Mastercard.

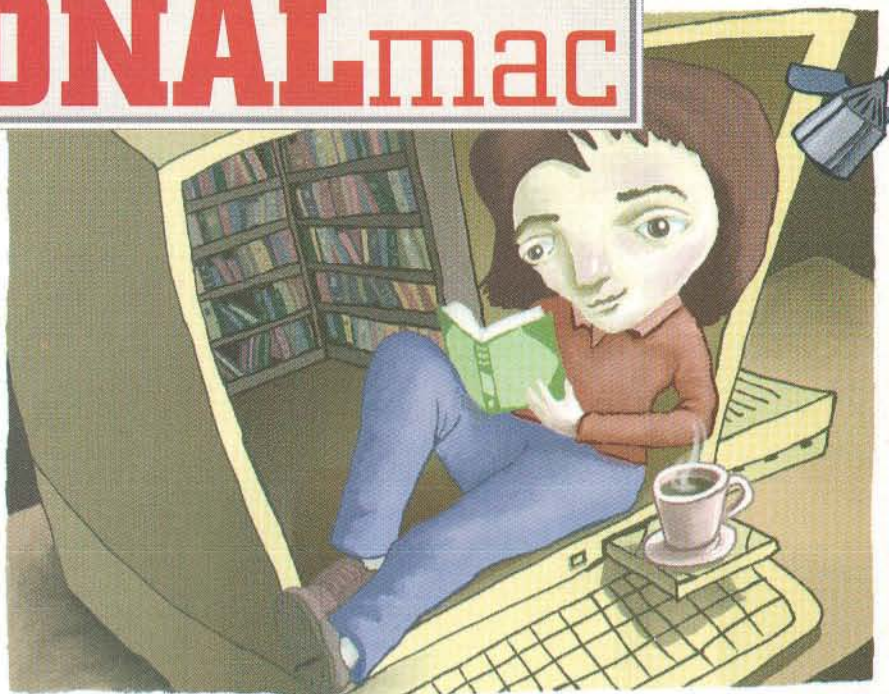
Scribblers Media, Inc.

1775 N. State St., Girard, OH 44420
800.860.2324 (24 hrs) • www.scribblers.com

CIRCLE 379 ON READER SERVICE CARD

PERSONALmac

The most convenient reference library is the one in your Mac, if you have the right software.



By Tina Velgos

The Reference Desk

MY HOME REFERENCE LIBRARY doesn't consist of shelves and shelves of books. It consists of a handful of CD-ROMs, my Mac, and a connection to the Web. Even though my local library is often closed when I do research, I'm never at a loss for material. In the wee hours, I can do research for an upcoming article on LCD projectors and I can trace the history of projected images all the way back to cave dwellers.

I'll never stop using the vast number of books I can reach for on my

local library's shelves, but frankly, I've found that using Mac software and the Internet saves me time and gives me most of the information I need. Not all reference software does what I need or does it well, however. Much of what's available for the Mac is choice, but there are some serious drawbacks to some of what's out there. Here's a guide to help you decide which software deserves a spot in your own software reference library. Besides helping you with your work, my last tool can even help you find the perfect way to end a hard day of research.

A Word on Dictionaries

If you reference a dictionary often, you'll benefit from an electronic one. It will not only save you from having to lug heavy books (assuming you carry a PowerBook anyway) but will also search for words for you. Here are two of my favorite dictionaries:

The American Heritage Talking Dictionary ▼ (ⓂⓂⓂ; \$39.95 list), from SoftKey (800-227-5609 or 617-

494-1200), is particularly handy when you're not sure how to pronounce a word. That's because it can read aloud 72,000 of the whopping 200,000 words it contains. It also includes 1,500 photos and illustrations and 50 minimovies, such as a clip of a flower blooming. You also get a thesaurus of 1.5 million synonyms. Overall, this dictionary is affordable and fairly comprehensive.



If you're a true word nerd and the definitions you get from an average dictionary just aren't satisfying, then what you need is the **Oxford English Dictionary (OED)**, second edition (ⓂⓂⓂ; \$395 list), from Oxford University Press (800-451-7556 or 212-726-6246). This dictionary gives you the historical context for thousands of words and phrases. A search for the word *etymology*, for instance, brings up quotes that go back hundreds of years, such as this one from 1725: "This tracing of a word to its original... is sometimes a very precarious thing." The program's features include a Date Filter, for finding language used in a certain time period, and an impressively fast search engine that lets you find all occurrences of a word or a phrase much faster than you could look them up yourself.

This software isn't without problems, though. It may be fun for uncovering the history of a word, but the interface is no fun to look at. It's a tad on the ancient side — just black text on a white background with cryptic buttons. Rather than having one integrated window, it gives you three separate windows you must switch among in order to do searches and read text. Despite the awkward look, if you need to truly understand a word and you can afford \$400, this is a must-have for your software library.

If you don't want to buy the software, you can look up words free at dictionary.com (<http://www.dictionary.com/>), which has definitions from several dictionaries. You can find even more definitions in OneLook Dictionaries' 74 dictionaries, although you'll have to

You Gotta Love A Guy Who Thinks The Bureau of Alcohol, Tobacco & Firearms is a Convenience Store

"Absolutely the best first-person game of the year,
bar none...Duke Nukem is the undisputed king."

Boot Magazine

"A perfect 10!"

Computer Player

"★★★★★" (5 out of 5 stars)

Computer Life

"★★★★★" (5 out of 5 stars)

PC Games

"...it makes pretty much every PC game
we've seen - DOOM included -
look slightly dull."

PC Gamer

"Duke is king."

Computer Gaming World

#1
Selling PC Game
of 1996
Available in June
for Macintosh

DUKE NUKEMTM 3D

for Macintosh®

Come Get Some In June!

800-229-2714

Call for a free catalog or visit our website at www.wizworks.com

System Requirements: Macintosh with a 68040 or higher microprocessor, 8MB RAM,
color monitor and CD-ROM drive. Also accelerated for Power Macintosh.

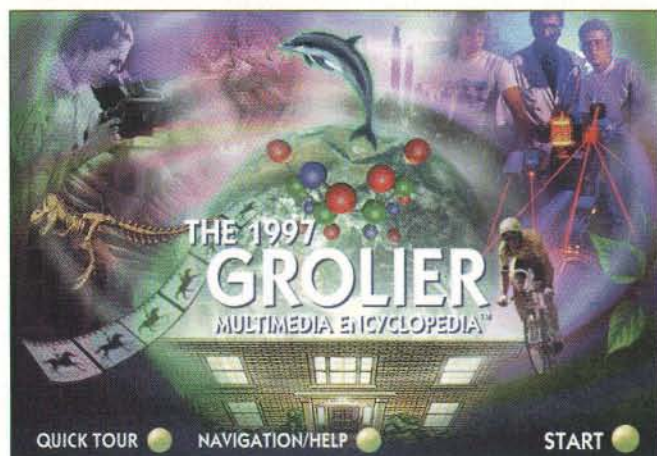
Created by



Mac version by



MACSoft[®]
A GT Interactive Company
2300 Berkshire Lane, Plymouth, MN 55411 612.509.7600

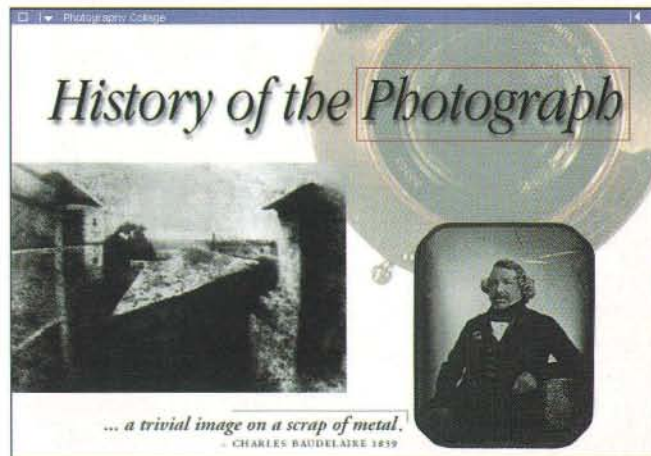


put up with the site's ads. If it's not definitions you need but rather synonyms, check out Roget's Internet Thesaurus (<http://www.thesaurus.com/>).

Volumes on Encyclopedias

I love the concept of accessing an entire encyclopedia on CD-ROM. It's not only an efficient use of space but also makes creating projects simple, since you can cut and paste information and photos and print what you want. Mac users can choose between two excellent encyclopedias.

It's safe to say that ▲ **The 1997 Grolier Multimedia Encyclopedia** (★★★★; \$49.95 list), from Grolier Interactive (800-336-3686 or 203-797-3530), is the most Mac-friendly encyclopedia available. The interface makes it easy to access articles, movies, pictures, sounds, and an atlas that has over 1,200 detailed maps without having to wade through pages of unnecessary information. This comprehensive software contains 50,000 articles, links to thousands of prescreened Web sites, up to 60 hours of free Internet



access with free Netscape Navigator software, and 15 hours of music and sounds. You're also bound to enjoy its 16 informative tours on various topics, such as my personal favorite — human anatomy, where the software lets you rotate, take apart, and assemble a human skull.

You'll either love or hate your other choice: ▲ **Encarta 97 Encyclopedia Deluxe Edition** (★★★★; \$79.95 list), from Microsoft (800-426-9400 or 206-882-8080). There's plenty to love — this two-disc set is loaded with detailed articles, pictures, videos, animations,

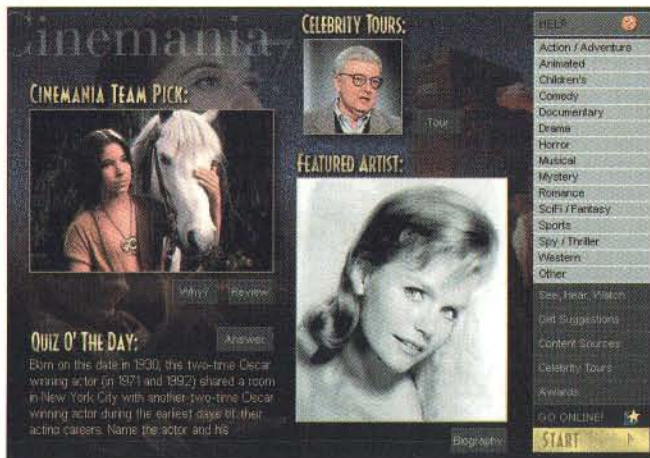
guided tours, timelines, and an atlas. You can also access the Internet to obtain free monthly updates to the encyclopedia and check out links to magazines, newspapers, reference books, and other resources.

Hmm, does having two CD-ROMs mean twice the fun? Not exactly. When you want to play with the toys — you know, watch a video or listen to music or audio — you have to insert the second disc. Switching back and forth becomes annoying fast. To make matters worse, the interface seems designed for Windows 95, which means that

There's a faster, cleaner



Houston, we have liftoff. Presenting the Apple® Internet Connection Kit. Everything you need to blast onto the Internet, browse the web, and send e-mail in one simple to install, no hassle package. So what do you get? Well, the kit comes complete with Netscape Navigator™ 3.0 and Claris Em@iler™ Lite software, plus QuickTime® VR Player, RealAudio™ Player, Macromedia Shockwave, Adobe® Acrobat™ Reader, Farallon's Look@Me, and a host of other software that installs easily in just minutes. As if that weren't enough, Apple Internet Dialer will even help you select an Internet Service Provider, and set up an account with just a few clicks of your mouse. And if you have any problems, Apple Guide online help can answer any Internet related questions you may have —



navigating is at times far from obvious for Mac users. Thanks, Bill!

If you're willing to shell out \$14.95 per month, check out Britannica Online (<http://www.eb.com/>).

Reels of News

Dictionaries and encyclopedias give you good general information on a topic, but if you want to hear the kind of reports you can get only from a news source, you need **ABC NewsLinks** (★★★★; \$29.99 list), from Creative Wonders (800-543-9778 or 415-482-2400). *ABC News*

anchor Forrest Sawyer gives you the news angle on worldwide events. Besides watching TV news footage, you can also look up statistics, maps, country profiles, and time lines. The Names and Faces section adds extra flavor to this software — it lets you get short biographies and quotes from such famous personalities as Einstein and Madonna.

News is ever changing, and so is this software's content. You can download daily news updates from America Online or from the ABC News/Creative Wonders Web site to add to the ABC NewsLinks software.

References to References

Although we've mentioned several Internet reference sites, you can find even more at the Internet Public Library (<http://ipl.sils.umich.edu/>). This is one of the best places to begin research on the Web, because it's well organized and filled with links. Also, Tara Calishain's book *The Official Netscape Guide to Internet Research* (★★★★; Ventana Communications Group, 1997; \$29.99) is loaded with URLs for all kinds of reference sites. It also describes the best ways to access, organize, cite, and post information on the Net. If you're an experienced Web surfer, you can skip the first three chapters, but the rest of the book has many useful insights. The writing is candid and entertaining.

Research for the Fun of It

There's one more reference guide that every thorough researcher needs — **Cinemania 97** (★★★★; \$34.95 list), from Microsoft. It may not contribute directly to writing a profound paper or to an expert understanding of a topic, but it will help with your postproject research — finding good entertainment.

Unlike the other Microsoft

product I review here, *Cinemania 97* has an interface any Mac user could love. It makes it easy to get at the information you're looking for. The movies the software describes are fairly current, and the critiques are helpful. Learn fun-filled facts on over 10,000 movie personalities, read more than 4,500 profiles of directors, and view over 1,000 movie stills that capture memorable performances. Although *Cinemania 97* contains only 30 video clips, it includes 150 movie-dialogue sound clips — an impressive number. New this year in *Cinemania* are *Celebrity Tours* — behind-the-scenes looks at movie greats.

Endnotes

What more could I want from a reference library? It's compact and yet full of as much information as I could get from volumes of books. It's enhanced with sound and video, and I don't have to wait for the local library to open. Now if only it would pop my popcorn as well as help me select a good video. ☞

Tina Velgos is a technology journalist who reviews edutainment software, hardware, and computer books for her own Web site, The Review Zone (<http://www.TheReviewZone.com/>).

way to get on the Internet.



like, "This was so easy, why didn't I do this sooner?" The days of plodding along with complicated connections are over. With Apple, getting on the Internet now happens at warp speed. Visit your nearest Apple reseller, or order by calling 1-800-950-5382, ext. 1401. Apple. The power to be your best.

In Canada please call 1-800-361-6075 ext. 245. ©1996 Clavis Corporation. All Rights Reserved. Apple, the Apple logo and QuickTime are registered trademarks of Apple Computer, Inc. Clavis Em@iler is a trademark of Clavis Corporation. Adobe and Acrobat are trademarks of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions. Netscape Navigator is a trademark of Netscape Communications Corporation. RealAudio is a trademark of Progressive Networks, Inc. All other trademarks are property of their respective owners.



The Game Room

BY ROMAN LOYOLA

SERIOUS GAMERS DON'T JUST play games; they experience them. It's not enough to have cool software — you need hardware too.

ThrustMaster Steering Wheel

What if you had to drive your car with your keyboard? Until recently, that's all you had for playing driving games on your Mac. Finally, we have a steering wheel, the ThrustMaster Formula T2 (see photo), that you can use without buying a converter. It also comes with a set of pedals. The steering wheel mounts on your desk, and you can easily move it by unscrewing the mounting clips. This comfortable wheel is padded with rubber and firmly mounted on a console that includes two buttons and a miniature stick shift. Unfortunately, the stick shift seems unsturdy and the brake and accelerator pedals, although rugged, are small and close to each other. From time to time, I accidentally pushed down both with one foot.

The Formula T2 comes with a utility for calibrating the wheel specifically for the games on your Mac. The utility is easy to use, but sometimes it doesn't feel like your settings have actually been set. In one instance, the stick shift was somehow set to act as my accelerator.

Sierra On-Line Racing Games

I used the Formula T2 with IndyCar Racing and NASCAR Racing (shown in background). If you're hungry for a racing game, you'll probably enjoy

either of these Sierra On-Line games. They feature numerous tracks, good action, a paint tool for creating custom cars and uniforms, and excellent graphics. The graphics do come at a price, though — if you try running either game on a Power Mac 6100 or 7100, you'll find it unplayable, even when you turn a lot of the shapes and textures off. This game is for PowerPC systems only and should be played on one with a fast (100-MHz or faster) processor.

CH Products' Pedals and Joystick

Ace digital pilots who want to get as close as possible to the experience of flying a plane should invest in one of CH Products' sets of pedals, CH Pedals or CH Pro Pedals. You can configure them to control the rudder of a plane or a helicopter, or you can use them as the brake and accelerator for driving. The CH Pro Pedals also slide back and forth to give you even better control. Each set has a 7-foot-long ADB cable with a pass-through connector. The pedals themselves are sturdy and large enough for big-footed fellows like me (I wear a size-13 shoe). The pedals might be a bit large for kids with a shoe size smaller than a children's 5.

Don't count on being able to use the pedals with every game. Although you're free to configure them for use in games other than flight sims, the pedals aren't always well suited. I tried them with

Marathon Infinity and found the experience confusing.

The perfect complement for either of the CH pedal sets is the FlightStick Pro. It's sturdy and has a trigger, three button controls, and an eight-way switch. Southpaws will be glad to know it's designed to be used with either hand. It's a pretty big joystick, though — if you have small hands, this might not be for you.

Altec Lansing Speakers

The built-in Mac speaker is such a wimp. For the ultimate gaming experience, you need to get a pair of external speakers. The Altec Lansing ACS55 Power Gaming Speaker System is great for gamers who want to feel their sound, not just hear it.

These speakers come with a pair of midrange satellites with tweeters and a subwoofer. The subwoofer is a 40-watt, 6.5-inch-long throw woofer that sits underneath your desk and adds some serious kick to your sound. The bass is deep, effective, and at times thunderous. It's a tiny bit fuzzy, but adjusting the output of the subwoofer should help alleviate the fuzziness.

The 12-watt satellites each have a 3-inch midrange driver and a .5-inch tweeter driver. The Altec Lansing speakers are also capable of adjustable Surround Sound, which makes you feel as if sound is engulfing you, not just coming directly at you. One strange effect of the Surround Sound is that at higher levels, there doesn't seem to be a difference between foreground and background sound — everything sounds as if it's on the same plane.

The satellites are uniquely shaped to project the Surround Sound — they don't look like typical computer speakers. In fact, they're downright ugly. But inside the ugly exterior is some sweet-sounding hardware that's great for games.

Cambridge SoundWorks Sound System

If you want a top-flight sound system for your Mac for everything from games to music and you have the money to spend (around \$350), check out the Cambridge SoundWorks MicroWorks sound system. It has the cleanest sound we've heard from any computer speaker system.

The 42-watt subwoofer produces clean bass, and the 12-watt satellites

produce excellent highs and warm midrange sound. The overall sound is very clean and clear, and it doesn't produce the typical muddiness (even with poorly recorded sound files) you get from other speakers. You can actually hear a bass player or guitarist pluck strings. The satellites are small, measuring 4 x 4 x 3.63 inches, but the subwoofer is a huge 17.5 x 9 x 8 inches — you'd better have plenty of foot space under your desk. The speakers come in black or white.

Roman Loyola is a MacUser associate editor. Assistant editor LaMont Ridgell also contributed to this report.

GAME POINT

Altec Lansing ACS55: Power Gaming Speaker System ★★★★★

Price: \$200 (estimated street).
Company: Altec Lansing Technologies, Milford, PA; 800-258-3288 or 717-296-2818; <http://www.altecomm.com/>.
Reader Service: Circle #414.

Cambridge SoundWorks MicroWorks ★★★★★

Price: \$350 (estimated street).
Company: Cambridge SoundWorks, Newton, MA; 800-367-4434 or 617-332-5936; <http://www.hifi.com/>.
Reader Service: Circle #415.

CH Pedals ★★★★★

Price: \$80 (estimated street).
Company: CH Products.

CH Pro Pedals ★★★★★

Price: \$149.95 (list).
Company: CH Products.

FlightStick Pro ★★★★★

Price: \$80 (estimated street).
Company: CH Products, Vista, CA; 800-624-5804 or 619-598-2518; <http://www.chproducts.com/>.
Reader Service: Circle #416.

IndyCar Racing ★★★★★

Price: \$60 (estimated street).
Company: Sierra On-Line.

NASCAR Racing ★★★★★

Price: \$55 (estimated street).
Company: Sierra On-Line, Bellevue, WA; 800-757-7707 or 206-649-9800; <http://www.sierra.com/>.
Reader Service: Circle #417.

ThrustMaster Formula T2 ★★★★★

Price: \$155 (estimated street).
Company: ThrustMaster, Hillsboro, OR; 503-615-3200; <http://www.thrustmaster.com/>.
Reader Service: Circle #418.



THRUSTMASTER FORMULA T2 STEERING WHEEL

hLeP me, Mavis.

Whether you're learning to type or just want to improve, one program rises above the rest - Mavis Beacon Teaches Typing. Only Mavis adjusts to your skill level and continually monitors your progress like a good teacher should. Just ask her four million alumni. For more information on new version 5 and the name of your local retailer, call 800-234-3088. *And type better, faster.*

CIRCLE 95 ON READER SERVICE CARD



(New Version 5)



ANDY IHNATKO

Control Freak

I'VE REALLY GOT TO try to stop praising the ADB I/O at every opportunity. Not only have I managed to annoy my friends and family to the point of excommunication — and keep in mind that my relationship with this group of people has survived even my annual Academy Awards rants — but I'm afraid that if I prove myself any *more* adept at product plugs, I'll get a phone call from *The Rosie O'Donnell Show* inviting me to guest-host.

But hey, my enthusiasm for this little device is well founded. For those of you who didn't read my most recent Mac Expo coverage on ZDNet Mac or haven't casually asked me what I was up to merely as a way to get a conversation going, the ADB I/O, from BeeHive Technologies (<http://www.bzzzzzz.com/>), is a relatively cheap little box about the size of a pack of cigarettes (100s) that plugs into your ADB port and lets you interface your Mac to Real-World stuff. Describing the full capabilities of this utterly frabjous accessory would really require an extensive and personally very lucrative feature article; what if I were to just describe the implications of its ability to open and close a bank of electrical switches or sense whether or not a switch is open or closed?

Think about all the cool stuff in your office that operates at the touch of a switch. Oh, wait, some of you have to work in the sort of office where you can get fired for wearing a tie with too much yellow in it. Well, think about the cool stuff in *my* office, then, such as my Darth Vader Electronic Bank. Drop in a coin (or press the button on its base), and the lights on Darth's chestpiece flash and he pivots left and right, delivers a line amid his theme music, and then draws and torches his lightsaber. On its own, it teaches the kids solid American values such as the relationship between the acquisition of wealth and the subsumption of the soul by a universal force of evil. But run two wires from that button into your ADB I/O, and Darth instantly becomes a Macintosh

peripheral! And because the ADB I/O can interface to eight switches, you can add the Artoo Detoo Electronic Bank *and* the See-Threepio Talking Action-Figure Storage Case, while leaving plenty of room to run sensor switches. Run two wires from the ADB I/O, to a magnetic reed switch (five bucks from Radio Shack), to your office fridge, and keep a log of accesses to your Dr. Pepper stash!

It's an absolute must-have Geek Box. If you're part of that segment of the populace



that can hook up a VCR without consulting a manual, you can build cool stuff with this ten minutes after opening the box. Not a week goes by in which I don't think of something else I'd like to build with the ADB I/O. It's absolutely, positively the worst blow to my personal productivity since that fateful day I first installed a Web browser.

But the basic concept is nothing new. For years, if you subscribed to geeky magazines, you could buy devices that plugged into any computer's serial port and accomplished much the same things (although you'd have to buy \$400 worth to get the ADB I/O's flexibility). No, what's special about the ADB I/O is that it's plugged into a Mac. And *that* means that you can control the ADB I/O, and the devices plugged therein, via AppleScript. (Music cue: "Ode to Joy" swells.)

It means I can use Darth as a mantle clock, scripting the Finder to activate him every hour on the hour. It means that when it's late at night and I've lost about 70 percent of my capacity for rational thought and thus might as well read Usenet postings, I can sit back in my chair and lazily navigate with a little four-button joystick in my hand that sends different commands to NewsWatcher, depending on which direction I twitch the stick. It means, if I may be allowed to shift into Misunderstood Visionary mode for a moment, that when I'm away and the door to my office is opened, the ADB I/O can activate a script that takes a picture and e-mails it to me. And when I pick it up and see that a house pet is sleeping on my laser printer, I can send back a reply that, when picked up and processed by my mail program, will shoo the beast off by activating Darth.

In two words or less: Bad Craziness.

Opportunity Box

In addition to giving me a cool tool to play with, BeeHive gives me another good way to explain what's so great about the Mac OS. Its focus has always been and — Tarim willing — always shall be about providing users with a box of Opportunities. Did AppleScript's engineers know they were providing me with the infrastructure for having my Mac set off my pager whenever the water in my aquarium gets too hot? Nope. Apple was, as usual, just creating the tools with which users can find their own solutions. And was I ever particularly interested in building robots? Not really. But as it has in so many other areas, my Mac made the mysteries accessible for me and thus Das Love Boot is now almost operational.

Is that, when all is said and done, the main difference between Apple and its chief competitor? The quiet, dignified wisdom of a Howard Johnson's place mat says it all: Microsoft wants to sell us fish. Apple wants to sell us fishing poles. 🐟

What You Wanted.



What You Got.

The New PowerCenter™ Pro What You Really Want.

PowerCenter Pro 210 Complete



210 MHz Power PC Processor 32 MB RAM (512 MB max) Power 17" Monitor*

- Upgradeable 210 MHz PowerPC 604e Processor
- 2 GB 5400 RPM HD
- Exclusive 60 MHz Bus
- 16X CD-ROM Drive
- 1 MB Level 2 Cache
- 2 MB Video DRAM (4 MB Max)
- 3D Accelerated Graphics
- 3 PCI Expansion Slots
- Mini-tower Enclosure
- 33.6 Global Village Modem
- Extended Keyboard and Mouse
- \$1,000 Bundled Software
- Add Iomega 100 MB Zip Drive Only \$145

Just \$2995

PowerCenter Pro 180 starter 16 MB RAM (512 MB max) 2 GB Hard Drive Exclusive 60MHz Bus

- Upgradeable 180 MHz PowerPC 604e Processor
- 2 GB 5400 RPM HD
- 16 MB RAM (512 MB Max)
- Exclusive 60 MHz Bus
- 2 MB Video DRAM
- 3D Accelerated Graphics
- 16X CD-ROM Drive
- 1 MB Level 2 Cache
- 3 PCI Expansion Slots
- Low-Profile Enclosure
- \$1,000 Bundled Software



Monitor not included

\$2095

36 month business lease \$82 per month

PowerCenter Pro 180 complete Power 15" Multimedia Display** 32 MB RAM (512 MB max) 33.6 Global Village Modem

- Upgradeable 180 MHz PowerPC 604e Processor
- 2 GB 5400 RPM HD
- Exclusive 60 MHz Bus
- 2 MB Video DRAM
- 3D Accelerated Graphics
- 16X CD-ROM Drive
- 1 MB Level 2 Cache
- 3 PCI Expansion Slots
- Mini-Tower Enclosure
- \$1,000 Bundled Software
- Add Iomega 100 MB Zip Drive only \$145



15" Monitor shown

\$2695

36 month business lease \$94 per month

PowerCenter Pro 210 starter 210 MHz PowerPC 604e Processor 16 MB RAM (512 MB max) Exclusive 60 MHz Bus

- Upgradeable 210 MHz PowerPC 604e Processor
- 2 GB 5400 RPM HD
- 16 MB RAM (512 MB Max)
- Exclusive 60 MHz Bus
- 2 MB Video DRAM
- 3D Accelerated Graphics
- 16X CD-ROM Drive
- 1 MB Level 2 Cache
- 3 PCI Expansion Slots
- Low-Profile Enclosure
- \$1,000 Bundled Software



Monitor not included

\$2395

36 month business lease \$89 per month



Power 17" Monitor Display* For Just \$629

Get a quality Power Computing .26 dot pitch high resolution display. It's great for graphics professionals. Vis. 15.7"

RAM Upgrades: 8MB \$65 32MB \$260 16MB \$130 64MB \$500

Upgrade your new system with plenty of RAM. Power Computing's prices are competitive and all of our RAM has the same warranty as our systems, plus it's tested, pre-installed, and hassle-free.



Power 15" Multimedia Display** Just \$339

Our 15" multimedia display with built-in speakers makes a great second monitor for pallets or a primary monitor for anyone on a budget. Vis. 13.7"

**CUSTOM-CONFIGURE YOUR NEW SYSTEM.
CALL DIRECT 800-405-7693**

order online: www.powercc.com

CIRCLE 24 ON READER SERVICE CARD

MacOS and the MacOS logo are trademarks of Apple Computer, Inc. and are used under license. The MacOS logo is registered in the United States and in other countries. PowerCenter and PowerCenter are trademarks of Power Computing Corporation. The Power Computing logo is a registered trademark of Power Computing Corporation. All other brand and/or product names are the property of their respective holders. Prices and specifications are valid in the U.S. only and are subject to change without notice. *Visible image size 15.7" **Visible viewing size 13.7"

Stop Compromising. With T Now You Can Afford W

It seems like life is just one big compromise. Every day you probably buy something that's less than what you would've gotten if money were no object. You want the best of everything, but unless you have money to burn, you probably don't get the top-of-the-line every single time you make a purchase.



and onboard 3D video acceleration - all at prices that you would expect to pay for a less-powerful 603e processor system.

With prices starting at only \$2,095 and power that easily blows most so called top-end systems right out of the water, the PowerCenter Pro is the best deal you're going

Thanks to the our new PowerCenter Pro line, now you can afford the Mac OS™ system that you really want. With PowerCenter Pro, you don't have to compromise on performance to get the right price.

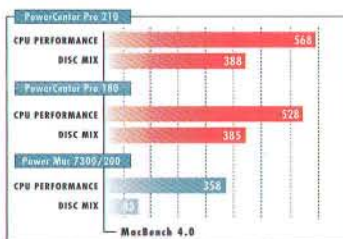
Our PowerCenter Pro line is mid-ranged in price, but its anything but the middle of the road - in fact, they're fully loaded professional-level systems. They feature either a 180MHz or a wicked fast 210 MHz PowerPC 604e processor with a speedy 60MHz bus, an exclusive 1MB level 2 cache, 32MB of RAM, a fast 2GB hard drive, a 16x CD-ROM,

to find in the Mac OS market.

Not only do you get a great system, you get it

from the Mac-compatible industry leader. As with all of Power Computing's products, the PowerCenter Pro features a 30-day money-back guarantee, a full 1-year warranty with on-site service available, free lifetime tech support,

custom-configuration direct from the manufacturer, and the peace of mind you get when you order from the Mac OS company with the best reviews that you're going to find. Maybe it's time to settle for the best.



PowerComputing

ORDER DIRECT 800-405-7693

Macworld's Editors Choice for Best Business Machine. At \$1495 The PowerCenter 150 Makes Great Business Sense.

PowerCenter™ 150 604

You have more choices than ever when choosing a Mac OS™ system. And all you really want to do is cut through the clutter and get a machine with the performance to run programs like Photoshop, Quark and Illustrator plus have the option to expand in the future. This is why the PowerCenter 150 makes perfect sense. You'll get PowerPC™ 604 technology at



the price of 603e performance. You'll get a Mac with three PCI slots, an upgradeable CPU daughtercard and memory expandable up to 160 MB RAM. To date, the PowerCenter 150 has been our best seller. And

probably with no coincidence, Macworld awarded PowerCenter the Editor's Choice for Best Business Machine.



"SO WHAT'S THE BEST CHOICE? SIMPLE: THE POWERCENTER 150 FROM POWER COMPUTING... POWER COMPUTING REMAINS THE BUSINESS LEADER." - MACWORLD MAGAZINE DEC, 1996

PowerCenter 150 starter 150 MHz PowerPC 604e Processor 16 MB RAM (512 MB max) 1 GB Hard Drive

- Upgradeable 150 MHz PowerPC 604e Processor
- 1 GB 5400 RPM HD
- 16 MB RAM (512 MB Max)
- 2 MB V-RAM
- 8X CD-ROM Drive
- 512 K Level 2 Cache
- 3 PCI Expansion Slots
- Low-Profile Enclosure
- *1,000 Bundled Software
- Extended Keyboard and Mouse



Monitor not included

\$1495

36 month business lease \$62 per month

PowerCenter 150 hot pick 150 MHz PowerPC 604e Processor 32 MB RAM (512 MB max) 2 GB 5400 RPM Hard Drive

- Upgradeable 150 MHz PowerPC 604e Processor
- 2 GB 5400 RPM HD
- 32 MB RAM (512 MB Max)
- 2 MB V-RAM
- 8X CD-ROM Drive
- 512 K Level 2 Cache
- 3 PCI Expansion Slots
- Low-Profile Enclosure
- *1,000 Bundled Software
- Extended Keyboard and Mouse



Monitor not included

\$1695

36 month business lease \$70 per month

PowerCenter 150 complete Power 15" Multimedia Display** 32 MB RAM (512 MB max) 2 GB Hard Drive

- Upgradeable 210 MHz PowerPC 604e Processor
- 2 GB 5400 RPM HD
- 32 MB RAM (512 MB Max)
- 2 MB V-RAM
- 8X CD-ROM Drive
- 512 K Level 2 Cache
- 3 PCI Expansion Slots
- Mini-Tower Enclosure
- *1,000 Bundled Software
- Add Iomega 100 MB Zip Drive only \$145



17" Monitor shown

\$1995

WITH 17" POWER MONITOR* \$2295

36 month business lease \$82 per month

**CUSTOM-CONFIGURE YOUR NEW SYSTEM.
CALL 800-405-7693**

order online: www.powercc.com



PowerComputing

MacOS and the Mac OS logo are trademarks of Apple Computer, Inc. and are used under license. The Mac OS logo is registered in the United States and in other countries. PowerPower and PowerCenter are trademarks of Power Computing Corporation. The Power Computing logo is a registered trademark of Power Computing Corporation. All other brand and/or product names are the property of their respective holders. Prices and specifications are valid in the U.S. only and are subject to change without notice. **Visible image size 15.7" *** Visible viewing size 13.7"